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Environmental Impact Report

LEVI'S PLAZA

OCT 25 1978

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DRAFT
ENVIRONMENTAL IMPACT REPORT

LEVI'S PLAZA

EE77.256
October 1978

Public Comment Period: 20 October to 21 November 1978

Public Hearing: 21 November 1978

Written comments should be sent to the Environmental Review Officer, 45 Hyde Street, San Francisco, CA 94102

REF 711.4097 L579d

Levi's Plaza : draft
environmental impact
1978.

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CONTENTS

CONTENTS
(Continued)

CONTENTS
(Continued)

TABLES

TABLES Continued

FIGURES

FIGURES continued

SUMMARY

PROJECT DESCRIPTION

The site of the proposed Levi's Plaza project is at the eastern foot of Telegraph Hill, adjacent to the waterfront, in northeast San Francisco.

The proposed nine-acre project site is bounded by Union Street on the south; Sansome Street and the foot of Telegraph Hill on the west; Chestnut, Lombard, and Greenwich Streets on the north; and Montgomery Street, Sansome Street, The Embarcadero, and Front Street on the east.

The project sponsor, BJW, Assoc., with offices in San Francisco, desires to provide office space and parking for Levi Strauss employees and other tenants in the project area. The firm seeks to maintain a diversity of land uses within the project area by constructing housing and related commercial facilities.

The corporate headquarters of Levi Strauss & Co., currently located at the Embarcadero Center, desires to relocate to the four-square-block portion of the proposed project that is bounded by Sansome, Union, Front, and Greenwich Streets.

The proposed Levi's Plaza project would contain the following:

- Some 840,000 square feet of office space.
- Some 25,000 to 28,000 square feet of commercial retail area containing a convenience-food store, a bank, restaurants and miscellaneous retailers.
- About 370,000 square feet of area for approximately 1,140 parking spaces.
- 311-336 condominium dwellings containing 370,000 square feet gross floor area.

1. Block A, bounded by Sansome, Filbert, Battery, and Union Streets, would contain a seven-story office building. The focal point of the structure would be a seven-story glass core. Parking for approximately 160 cars would be located in the basement level. The Cargo West Building, a two-story brick building measuring approximately 45 feet square, located at the intersection of Union and Battery Streets, would be retained. Filbert Street, between Battery and Sansome Streets would be closed to vehicular traffic and left open to the use of pedestrians between Blocks A and B.

2. Block B, bordered by Sansome, Greenwich, Battery, and Filbert Streets would contain a five-story office structure. Its eastern wall would be aligned with the glass atrium of Building A, and form an arcade walkway with the existing Italian Swiss Colony Building on the eastern portion of the block, to be renovated for use as office space.

3. Block C, bounded by Battery, Filbert, Front, and Union Streets, would contain a four-story office building. Filbert Street, between Front and Battery Streets would be closed to vehicular traffic and left open for the use of pedestrians between Blocks C and D.

4. Block D, bounded by Battery Street, Greenwich Street, The Embarcadero, and Filbert Street, would be developed as part of a 150,000 square-foot, landscaped, pedestrian plaza. The office structures would partially enclose the plaza, with main building entrances oriented toward it. As noted, Filbert Street between Sansome and Front Streets would be closed to vehicular traffic, left open to pedestrians, and incorporated into the design of the plaza.

5. Block E, bounded by the foot of Telegraph Hill on the west, on the north by Greenwich Street, and on the east by Sansome Street, would contain a four-story structure for computer support, research and storage functions.

6. Block F, bounded by the foot of Telegraph Hill on the south and west, and Lombard, Sansome and Greenwich Streets, would be developed with a three-story, above grade, parking structure. The parking structure would serve as a base (podium) for the construction of two buildings, one nine levels and the other four levels, containing a total of approximately 186 condominium dwellings. The uncovered roof of the parking structure would be landscaped with trees, shrubs, and walkways.

7. Block G, bounded by Telegraph Hill on the west, Chestnut, Montgomery, and Lombard Streets, would contain a nine-story structure with approximately 125-150 condominium dwellings. Parking for 150 cars would be provided in the structure.

Phase I construction, to extend through 1980, would include development of Blocks A, D, E, and G, portions of Blocks B, C and F and renovation of the Italian Swiss Colony Building. Phase II, to continue through 1981, would complete development of Blocks B, C and F and would begin at the conclusion of Phase I.

Total cost of the entire project is estimated at approximately $57,000,000.

The following impacts and mitigation measures would be associated with the completed project:

IMPACTS AND MITIGATION MEASURES

A. Geology and Seismicity

Impact: In the event of earthshaking, structures located near the base of Telegraph Hill would be susceptible to loose gravel and boulders falling down the Hill.

Mitigation: A wall would be constructed at the base of Telegraph Hill in the southwest corner of Block G to catch falling debris and prevent contact with nearby structures.

B. Atmosphere, Air Quality

Impact: Wind speeds sufficiently high to cause discomfort would occur in the proposed park on Block D approximately 20% of the time during summer months, 5-15% of the time during spring and fall, and less than 5% of the time in winter.

Mitigation: Trees and other vegetation in the northwest portion of the proposed park would be installed to reduce wind velocity.

C. Noise

Impact: During construction some disruption due to noise would be expected.

Mitigation: Beyond meeting the requirements of the San Francisco Noise Ordinance relating to construction noise, the mitigation of construction noise impacts could best be accomplished by the use of acoustical shielding of the pile driver, which is not planned.

D. Visual Quality

Impact: Construction of the nine-story condominium to the north of Telegraph Hill would partially obstruct views north from lower elevations of Telegraph Hill toward Telegraph Landing and portions of the Bay beyond.

Mitigation: The project sponsor would locate the structure toward the west portion of the site, near the steeper, undeveloped slopes of Telegraph Hill, to reduce view blockage.

E. Historical and Archaeological Resources

Impact: It would be difficult to dismantle and rebuild the remaining Pioneer Warehouse wall in a new location.

Mitigation: An expert in architectural masonry reconstruction would be employed as a consultant and supervisor in the relocation process.

Impact: Adverse impacts of construction on potential subsurface cultural resources would vary according to the type of construction to be performed and the type of remains that may lie beneath the surface.

Mitigation: A testing program, designed to maximize the probability of accurate location of Gold Rush ship remains before construction, would be undertaken where archival study and analysis show the highest historical archaeological potential. If a find were made, the State Historic Preservation Officer would be notified, to enable him to determine the significance of the find with respect to the National Register of Historic Place standards.

F. Energy

Impact: The project would use some 39.8 billion Btu of fuel oil per year (approximately 6,800 barrels). Approximately 25 million kwh of electricity would be consumed annually by the proposed project.

Mitigation: Project design would comply with new state energy conservation standards.

G. Transportation

Impact: Traffic flow on Sansome Street between Lombard and The Embarcadero would be worse during peak hours.

Traffic on Battery between Union and Broadway would be worse during peak hours.

There would be a potential traffic conflict resulting from vehicles exiting from the garage onto Sansome, then attempting right turns onto Lombard.

Mitigation: A garage exit should be provided at the Greenwich stub. Exiting vehicles destined for Battery Street should be encouraged to use this exit.

Impact: There would be a permanent loss of about 612 parking (545 off-street and 67 on-street) spaces due to construction of the proposed project. These spaces would not be replaced. Current parking space users would be required to park elsewhere once project construction begins.

The proposed parking supply would be 713 spaces short of the parking requirement of the San Francisco Planning Code.

Mitigation: Three-minute to five-minute frequencies on MUNI routes 32 and 15/42 would reduce the proposed project's parking demand by 5% (64 spaces). Additionally, the following

mitigation program oriented towards current car drivers could reduce the parking demand by 15% (180 spaces):

- A direct bus line along the Broadway or Bay Street corridor serving major residential areas in San Francisco.
- Bicycle lanes leading into the project area and bicycle storage facilities which would be provided on site.
- Car-pool matching and promotion efforts, including preferential parking for car pools in Block F.
- A van-pool program with reduced parking rates for the vans in the Block A garage.
- Parking disincentive measures making the price-rate structure less favorable to long-term parking.

Impact: Employees arriving by BART, AC Transit, SAMTRANS, Southern Pacific, and the ferries would have to transfer to another mode (MUNI) to reach the project site. The proportion of vehicle drivers among Levi Strauss employees would tend to increase from about 16% to about 17.5%. Sixteen additional bus runs on Routes 15/42 and 32 would have to be operated during the peak hour to provide adequate capacity to sustain the 17.5% vehicle-driver modal split. This would represent about 4-minute headways on the combined 15 and 42 routes and about 6-minute headways on Route 32.

Mitigation: To mitigate the effects on transit usage of Levi Strauss' move from the Embarcadero Center to the project site (i.e. to bring the car-driver proportion from 17.5% to 16%) the headways

on the 15/42 and 32 routes would have to be reduced to about 3 to 5 minutes during peak hours. No funds are available for equipment and staff necessary for implementation of such mitigation measures.

Impact: The proposed project would affect the City's population and growth to the extent that it would make more jobs available to San Francisco residents and increase the inventory of San Francisco dwelling units.

ALTERNATIVES

Alternatives to the proposed project considered include developing the project area to a more intensive level of use under existing zoning, retaining no existing buildings on the project site, providing less parking, and including additional land within the proposed open space/park.

I. PROJECT DESCRIPTION

A. LOCATION

The site of the proposed Levi's Plaza project is at the eastern foot of Telegraph Hill, adjacent to the waterfront, in northeast San Francisco, California (refer to the Regional Location Map, Figure 1, page 10). The site consists of Assessor's Blocks 107; 084; 108; 083; lots 1, 2 and 3 of Block 085; Block 080; and lots 1 and 3 of Block 060; (the seven parcels are hereafter referred to as Blocks A, B, C, D, E, F, and G, respectively).

The nine-acre project site is bounded by Union Street on the south, Sansome Street and the foot of Telegraph Hill on the west, Chestnut, Lombard, and Greenwich Streets on the north, and Montgomery Street, Sansome Street, The on Embarcadero, and Front Street on the east (refer to the Project Site Location Map, Figure 2, page 11).[1] All properties on the proposed project site are owned by the Travelers Insurance Company, Hartford, Connecticut.

B. OBJECTIVE OF SPONSOR

The project sponsor, BJW, Assoc., with offices in San Francisco, desires to provide office space and parking for Levi Strauss

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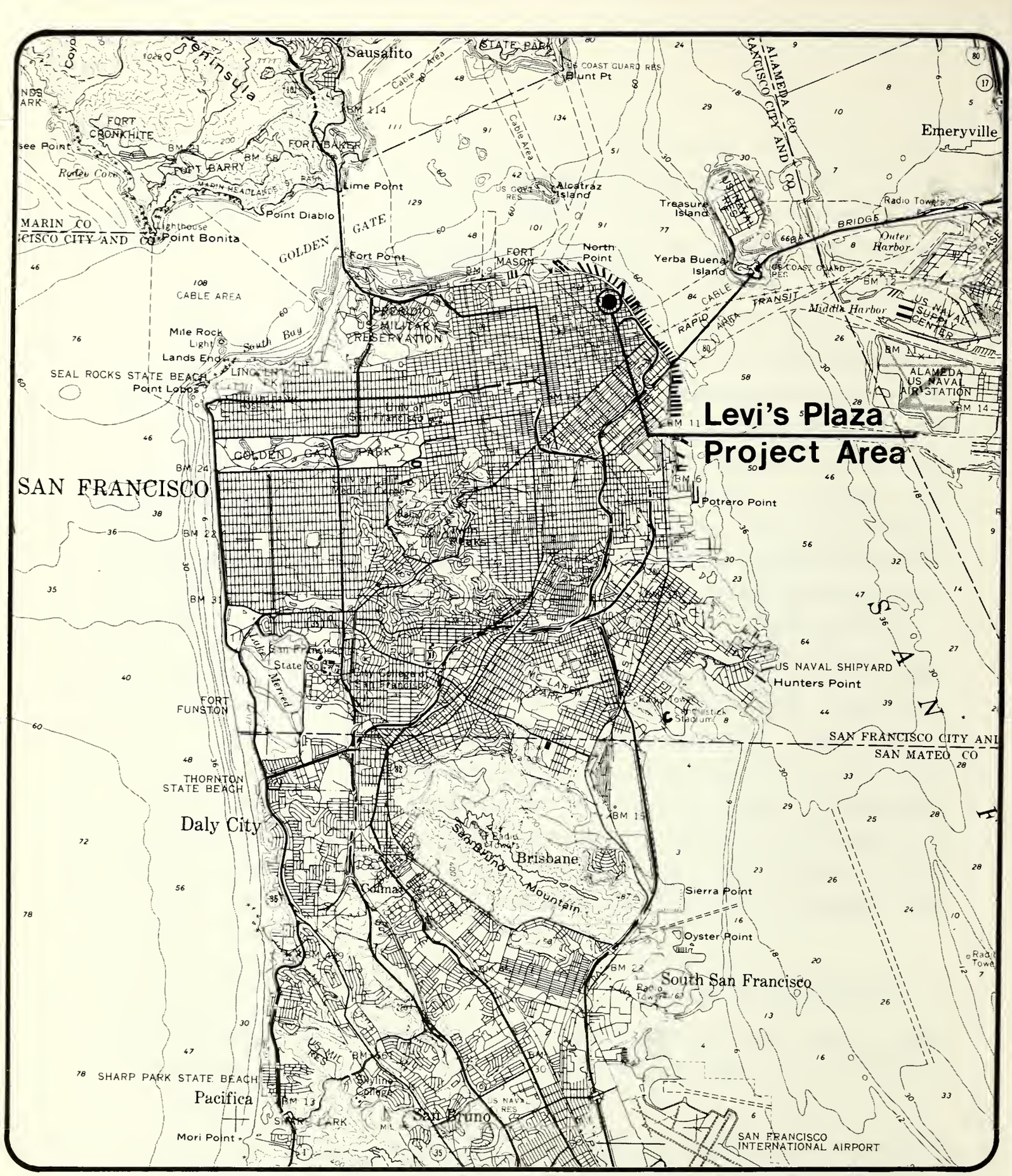
[1]The Zoning Map of the City and County of San Francisco does not show street closures in the vicinity of Telegraph Hill. See Figure 3, page 19 for existing street closures.



Regional Location Map

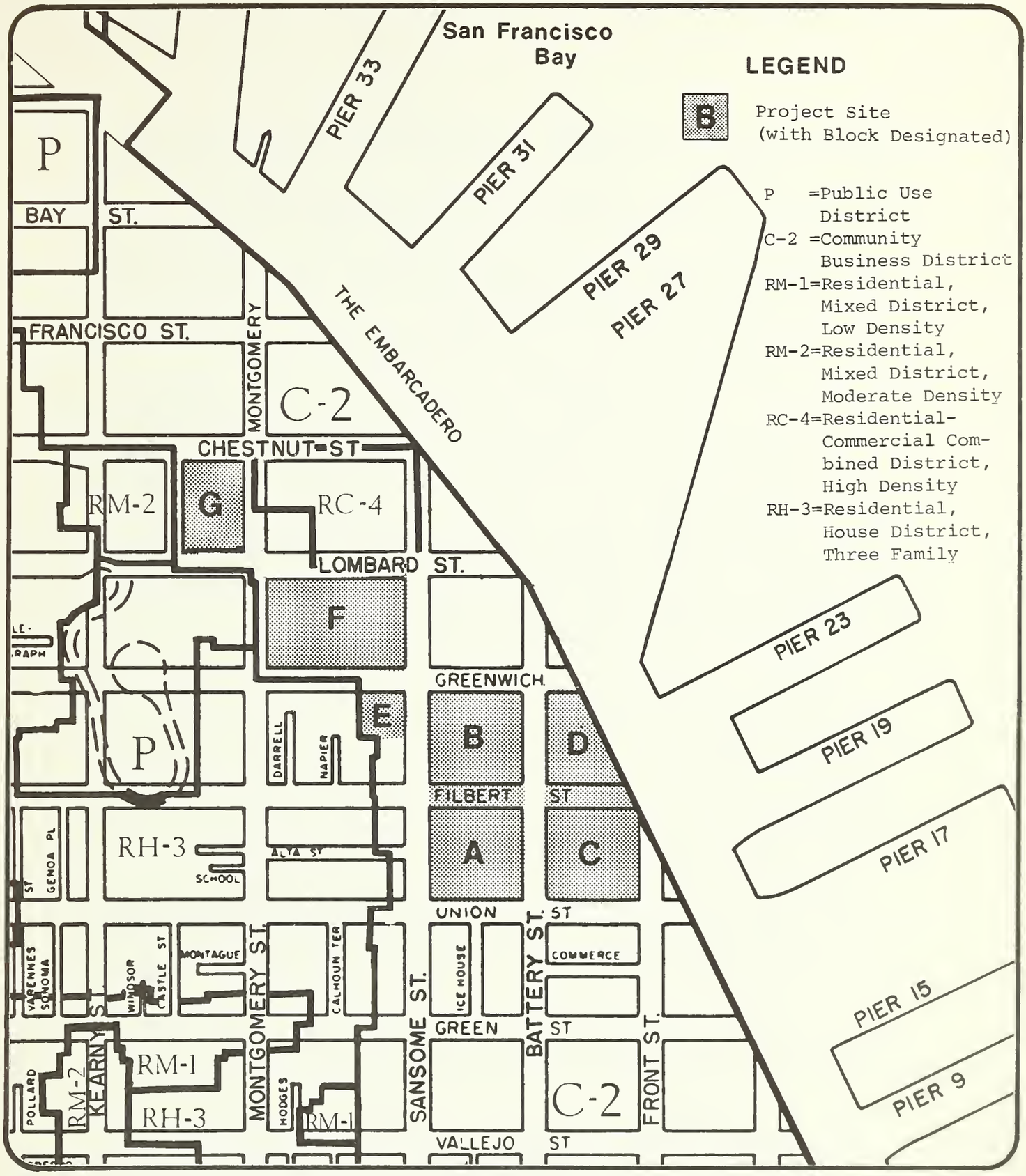
NORTH

0 1/2 1 2 4

Scale Miles

Source: U.S. Geological Survey

Figure No. 1



Site Location Map (with zoning indicated)

Note: See Section II-2 for Zoning description.

Source: Zoning Map of the City and County of San Francisco, 1975

NORTH

0 200 400 800

Scale Feet

Figure No. 2

employees and other tenants in the project area. The firm seeks to maintain a diversity of land uses within the project area and to realize a profit by constructing housing and related commercial facilities within the project area. Application would be made to the City of San Francisco for a Conditional Use/Planned Unit Development (PUD).

The corporate headquarters of Levi Strauss & Co., maker of Levi's jeans and sportswear, is located at the Embarcadero Center, San Francisco. The company desires to relocate to the four-square-block area bounded by Sansome, Union, Front, and Greenwich Streets and conduct its business in an environmental setting comprised of low rise buildings (buildings ranging from 40 feet to 84 feet in height) with surrounding open space. Levi Strauss & Co. also desires to remain near downtown commercial and service areas.

C. PROJECT CHARACTERISTICS AND SCHEDULING

1. Tenancy Mix

The proposed Levi's Plaza project would contain the following:

- 840,000 sq. ft. of office space.

  Levi Strauss would initially occupy approximately 40% of the office space. The remaining office space would be leased to other office tenants in smaller increments of space.

- 25,000 to 28,000 sq. ft. of commercial retail space, distributed throughout the project, for the following kinds of tenants:

Restaurants	- 12,000 sq. ft.
Banking/Savings & Loan	- 8,000 sq. ft.
Miscellaneous retailers	- 5,000 sq. ft.
Retail convenience food store	- 3,000 sq. ft.

- About 370,000 sq. ft. for approximately 1,140 parking spaces.

- 311-336 condominium dwellings containing 370,000 sq. ft. gross floor area.

Office, commercial and retail space would be owned and leased by the project sponsor, BJW, Associates. Condominium space would be sold to private owners.

2. Development (Refer to Figure 3, page 17).

Block A. Bounded by Sansome, Filbert, Battery, and Union Streets

A seven-story office building (defined as Building A), with a total gross floor area of some 364,000 square feet would be located on Block A. The focal point of the structure would be a seven story glass atrium core. Portions of the top three stories would be in tiers stepping back (or inward) from Battery and Filbert Streets (see Figure 4, page 18). Parking for approximately 160 cars would be located at the basement level. The Cargo West Building, a two-story brick building measuring approximately 45 feet square and located at the intersection of Union and Battery Streets, would be retained by the project sponsor. Filbert Street, between Battery and Sansome Streets, would be closed to vehicular traffic and left open to the use of pedestrians between Blocks A and B. (See Figures 3, 4, 5, 6, 7, and 8, pages 17, 18, 19, 20, 21, and 22).

Block B. Bounded by Sansome, Greenwich, Battery, and Filbert Streets

A five-story office building (defined as Building B), with a total gross floor area of 148,000 square feet, would be located on the western portion of Block B. The eastern wall would be aligned with the glass atrium of Building A, and

would form an arcade walkway with the existing Italian Swiss Colony Building on the eastern portion of the block. The two upper levels of Building B would be tiered inward from Filbert Street.

The project sponsors plan to renovate the vacant Italian Swiss Colony Building for use as office and retail space. The four-story brick structure was constructed in 1903. (Refer to Secton III, Setting, Historic and Archaeologic Resources.) There are three full stories and a mezzanine with a total gross floor area of approximately 75,000 square feet. (See Figures 3, 4, 9, and 10, pages 17, 18, 23, and 24).

Block C. Bounded by Battery, Filbert, Front, and Union Streets

A four-story office building (defined as Building C), with a total gross floor area of 220,000 square feet is proposed for Block C. Portions of the upper floors would be stepped inward from Battery and Filbert Streets. (See Figures 3, 11, and 12, pages 17, 25, and 26.) Filbert Street, between Front and Battery Streets, would be closed to vehicular traffic and left open to the use of pedestrians between Block C and D.

Block D. Bounded by Battery Street, Greenwich Street, the Embarcadero, and Filbert Street

Central to the design plans for the office complex is a landscaped pedestrian plaza encompassing all of Block D, and the southeast portion of Block B. The office structures would partially enclose the plaza, with main building entrances oriented toward it. As noted above, Filbert Street between Sansome and Front Streets would be closed to vehicular traffic and incorporated into the design of the plaza, tying Blocks A and B, and Blocks C and D together. Battery Street would not be closed. A total of approximately 150,000 square feet

of open space is planned within the four block area. (See Figure 3, page 17.)

Block E. Bounded by the foot of Telegraph Hill on the west, on the north by Greenwich and on the east by Sansome Street

A four-story structure, containing approximately 60,000 square feet of gross floor area, is proposed for Block E (lots 1, 2 and 3). The building would be used for support services, including computer support, research, printing and miscellaneous office and storage functions. (See Figures 3, 13, and 14, pages 17, 27, and 28.)

Block F. Bounded by the foot of Telegraph Hill on the south and west, and Lombard and Sansome Streets

A parking structure consisting of three and one-half levels, with three levels above grade, containing space for 825 cars, is proposed for Block F. Each level would contain approximately 80,000 square feet, for an approximate total of 265,000 square feet of parking space. Commercial shops, totaling approximately 5,000 square feet, would be located at street level along Sansome Street. The parking structure would serve as a base (podium) for the construction of two buildings, one nine levels and the other four levels, containing a total of approximately 186 condominium dwellings and having approximately 221,000 square feet of gross floor area. A number of condominium units would be placed along Montgomery Street as a part of the podium. The uncovered roof of the parking structure would be landscaped with trees, shrubs, and walkways. Of the 825 parking spaces provided, 211 would be reserved for the Block F condominium occupants. (See Figures 3, 15, 16, 17, and 18, pages 17, 29, 30, 31, and 32.)

Block G. Bounded by Telegraph Hill on the west, Chestnut, Montgomery, and Lombard Streets

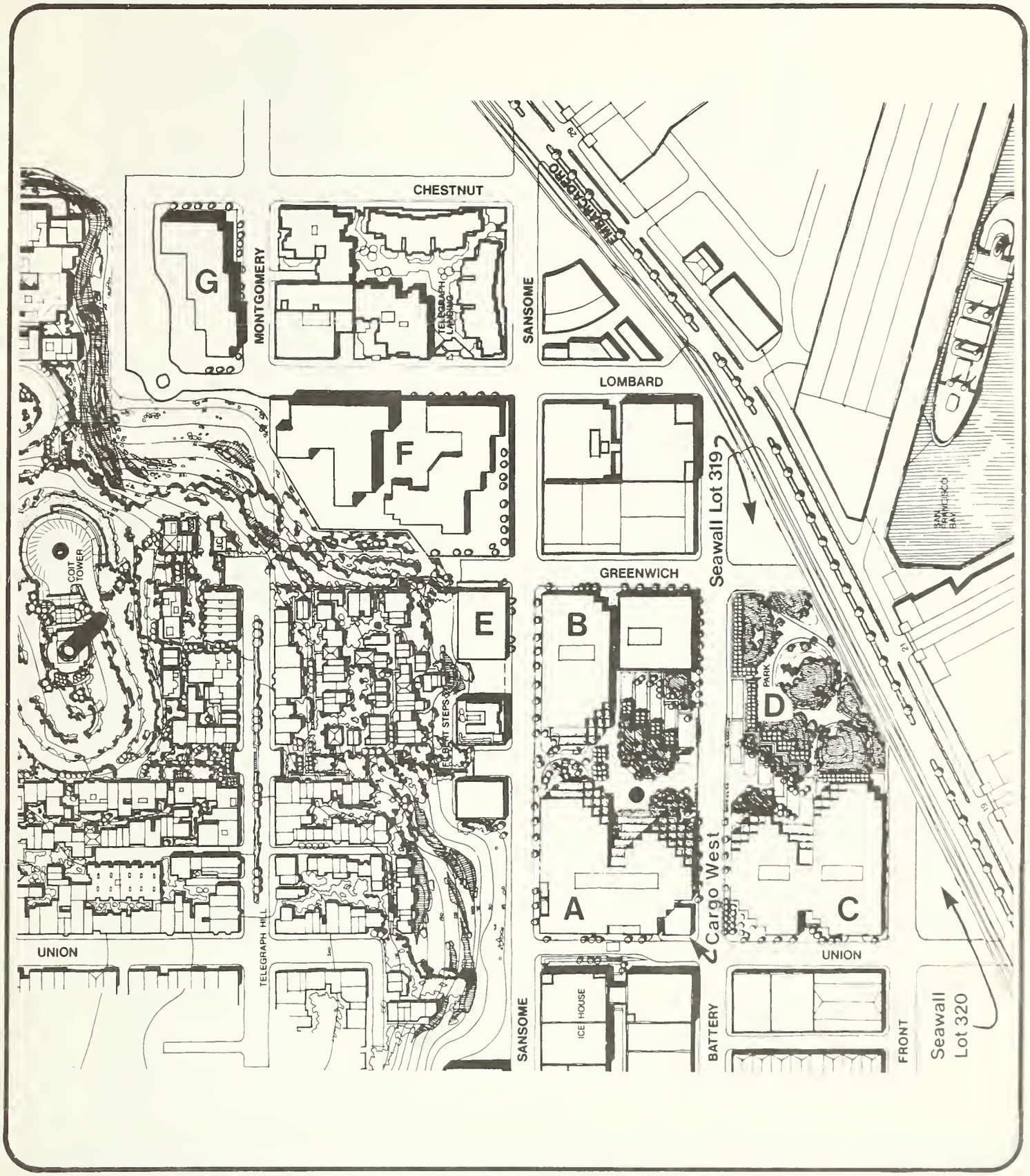
A nine-story structure, containing approximately 125-150 condominium dwellings of about 150,000 square feet gross

floor area, is proposed for Block G. Parking for 150 cars would be provided in the structure. (See Figures 3, 19, 20, 21, and 22, pages 17, 33, 34, 35, and 36.)

3. Project Scheduling and Cost

Construction would take place in two phases. Phase I would include development of Blocks A, D, E, and G, portions of Blocks B, C, and F, and renovation of the Italian Swiss Colony building. Phase I construction would extend through 1980. Phase II would complete development of Blocks B, C and F, commencing at the conclusion of Phase I and continuing through 1981.

Total cost of the entire project is estimated at approximately $57,000,000.



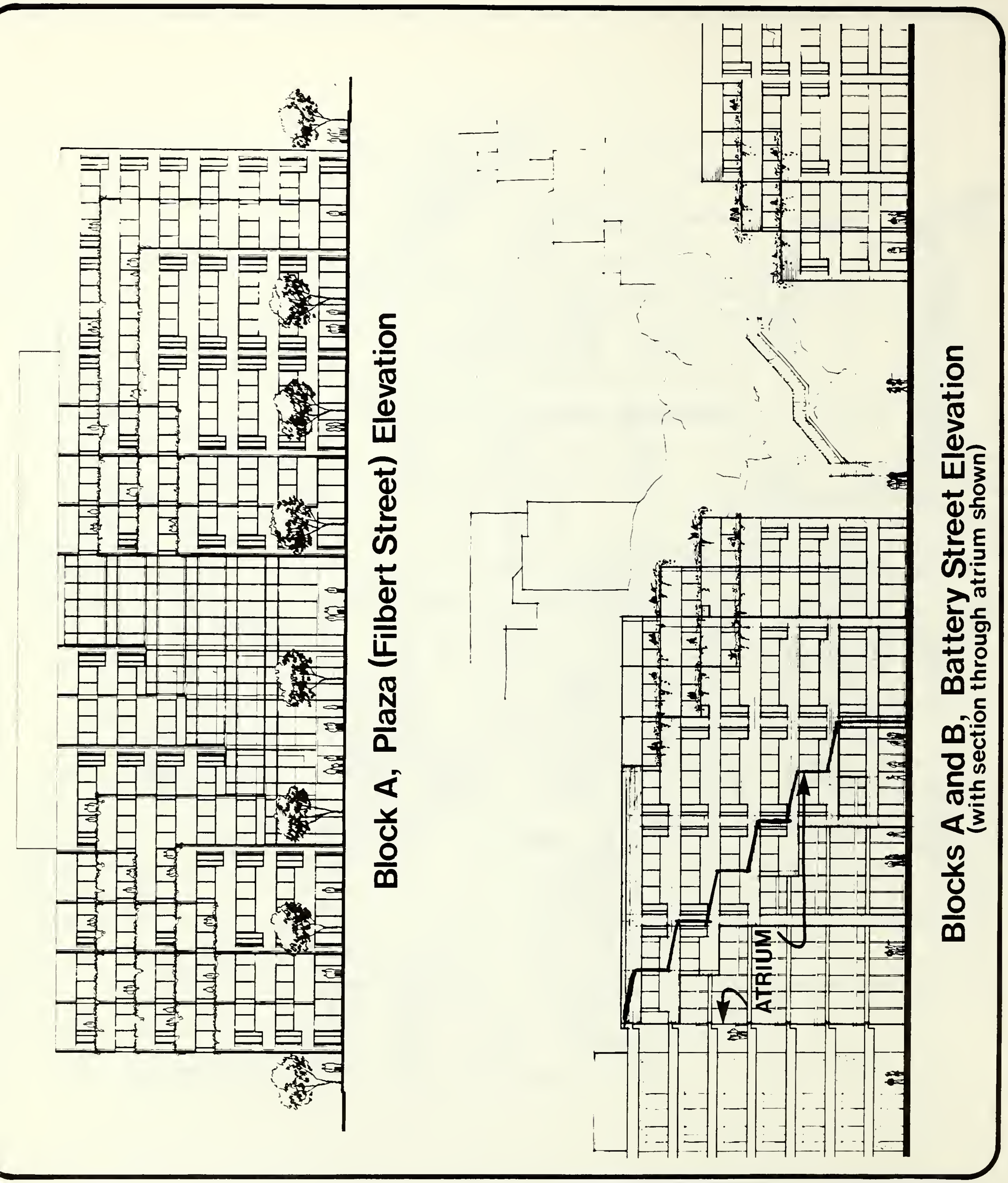
Site Plan

NORTH

0 100 200 400

Scale Feet

Figure No. 3



Building Elevations

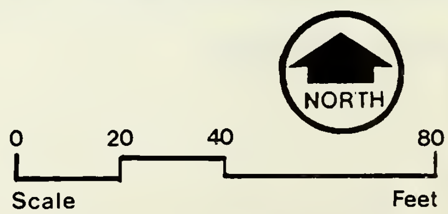
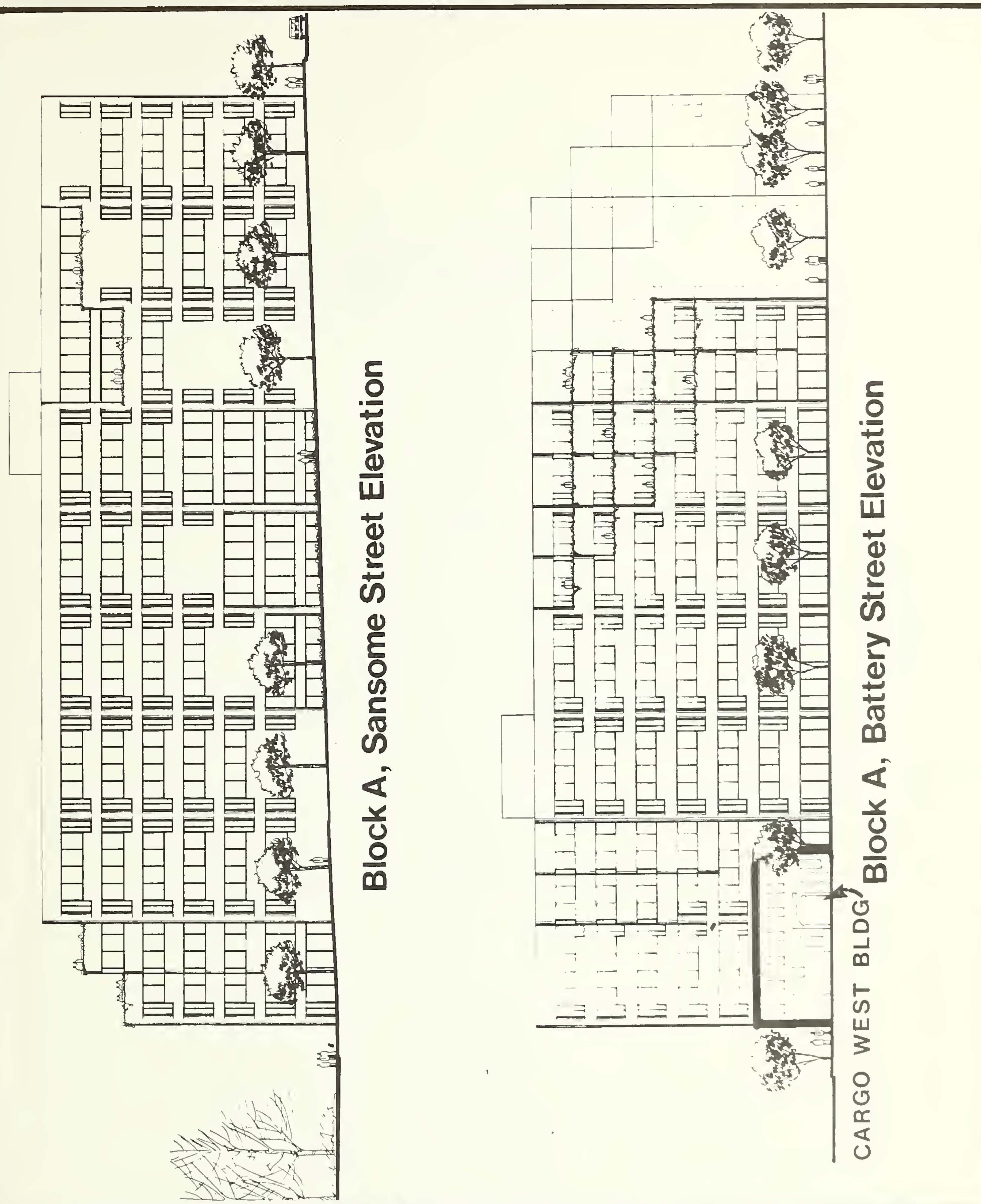


Figure No. 4

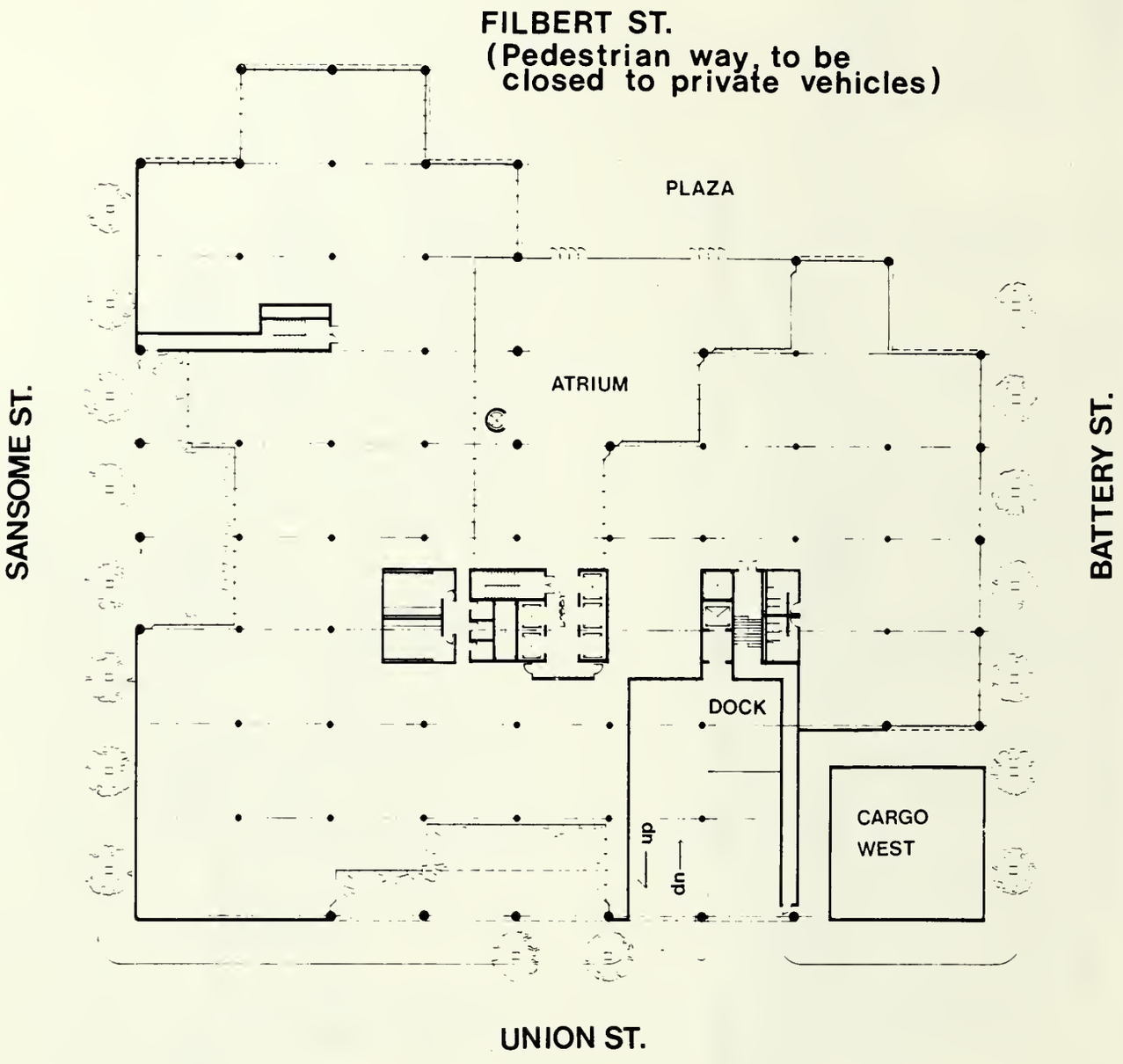


Building Elevations

NORTH

0 20 40 80
Scale Feet

Figure No. 5



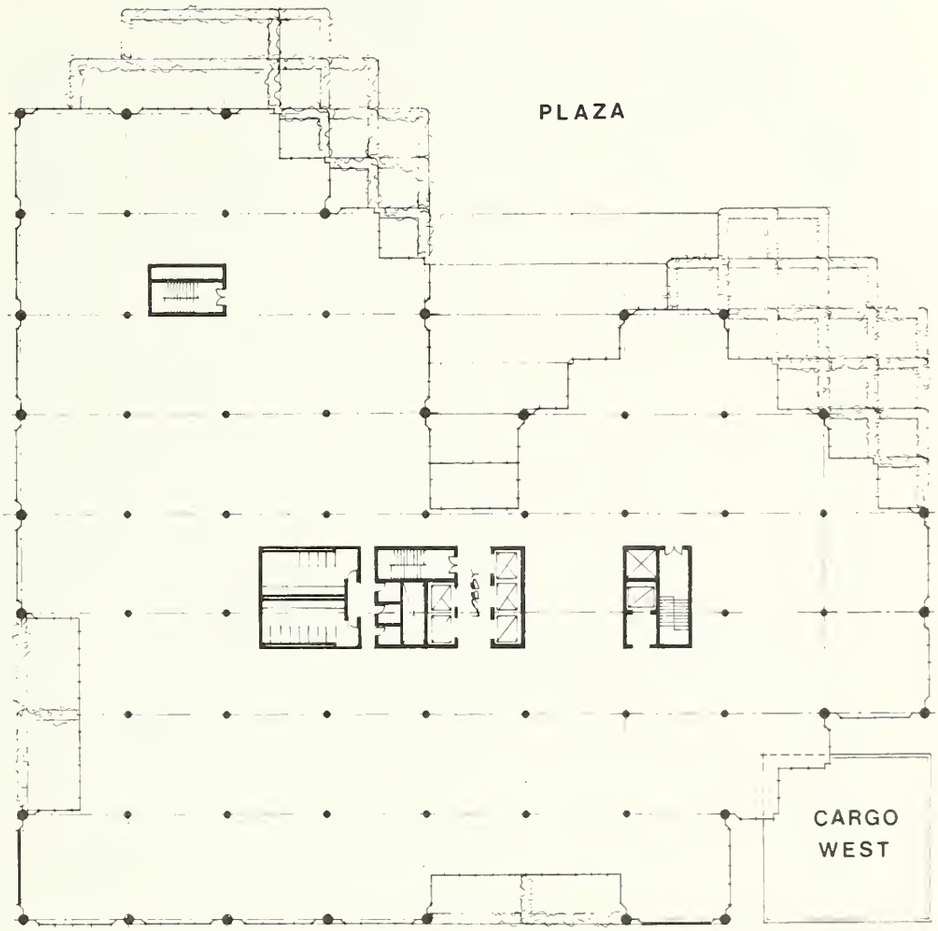
Block A Floor 1

NORTH

0 30 60 120

Scale Feet

Figure No. 6



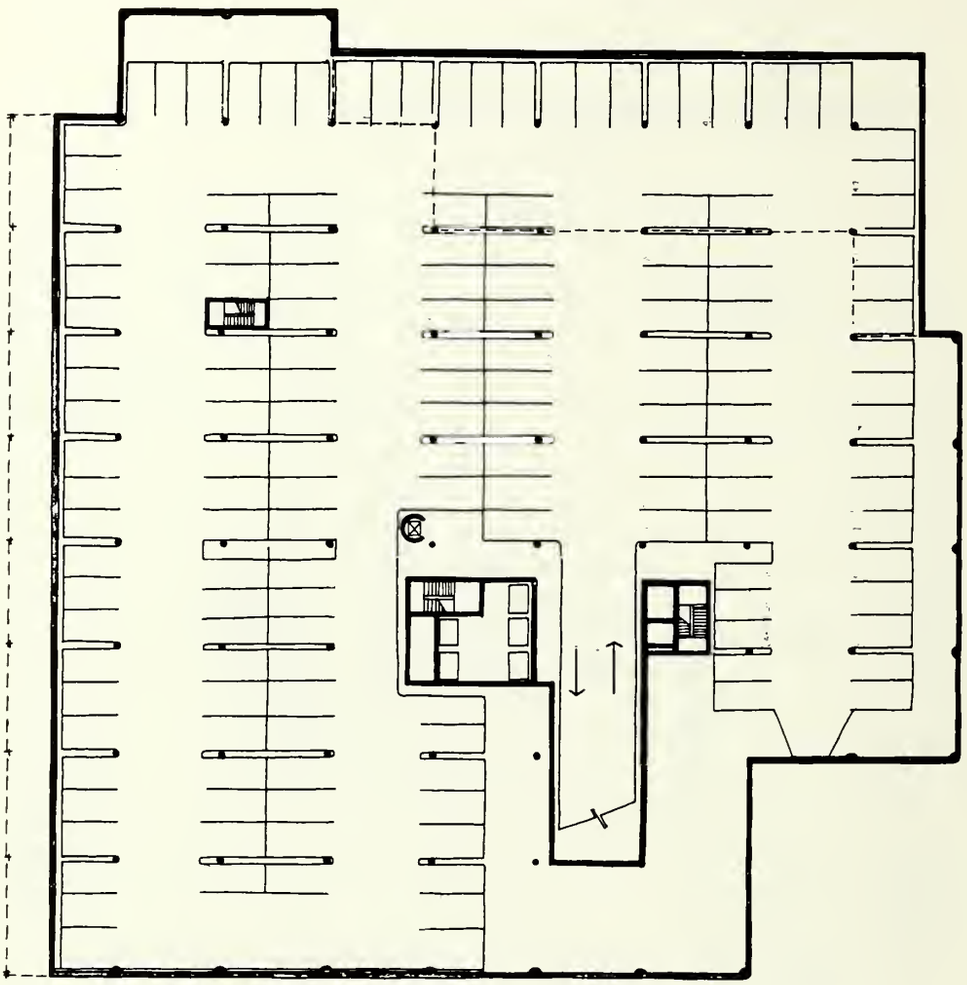
Block A Floor 7 (5,6 are similar)

NORTH

0 30 60 120

Scale Feet

Figure No. 7



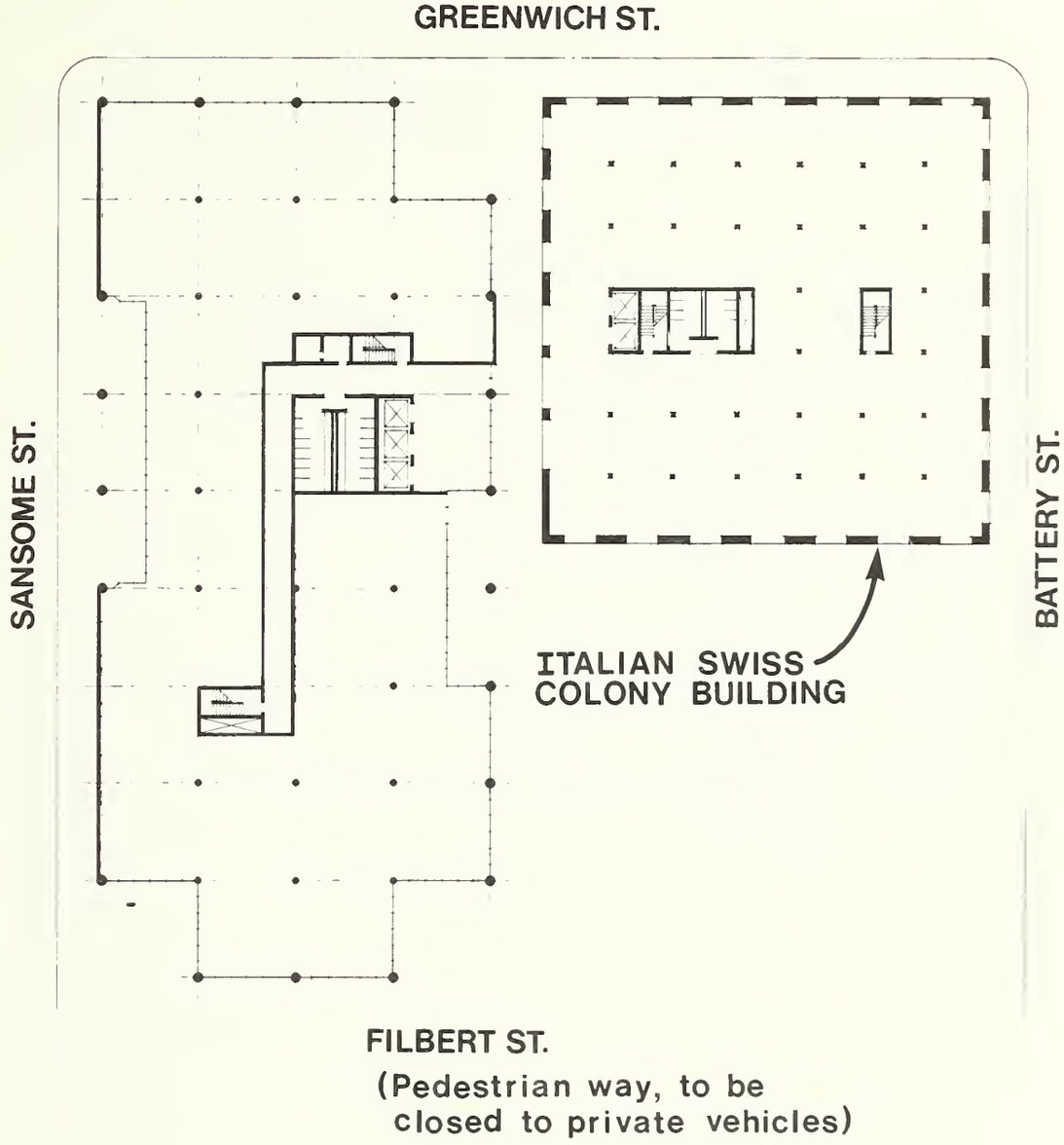
Block A Basement

NORTH

0 30 60 120

Scale Feet

Figure No. 8



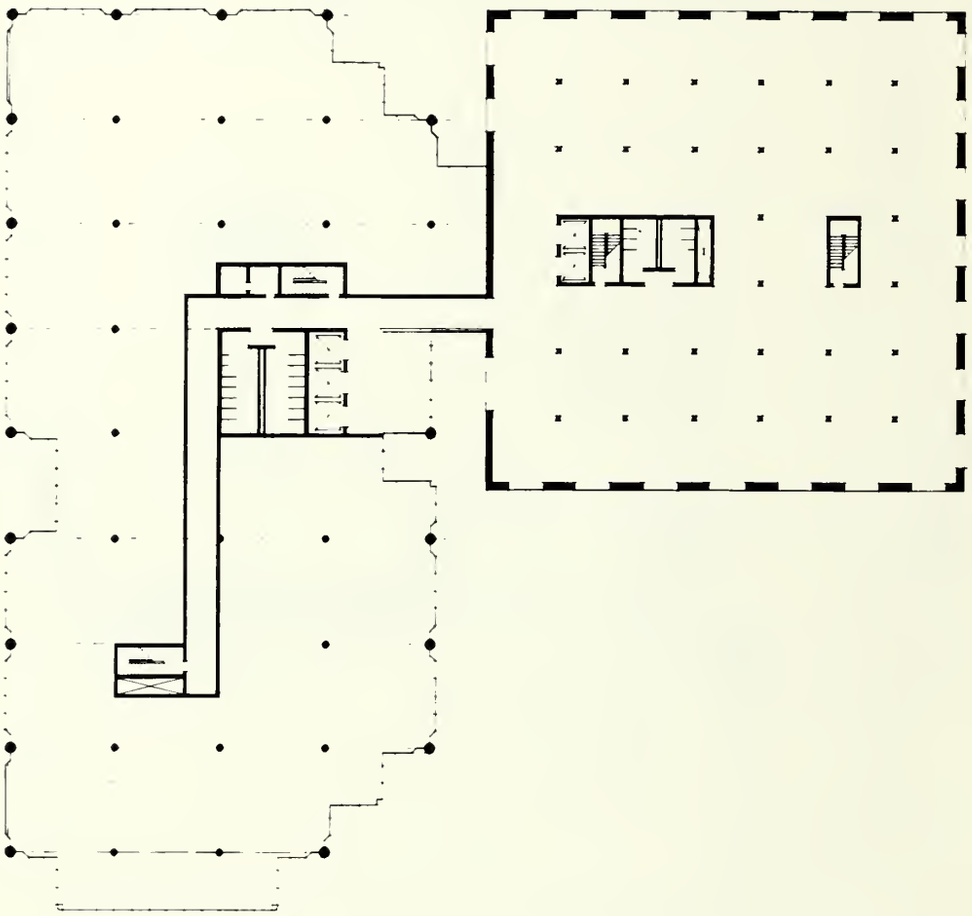
Block B Floor 1 (2 is similar)

NORTH

0 30 60 120

Scale Feet

Figure No. 9



Block B Floor 4 (3,5 are similar)

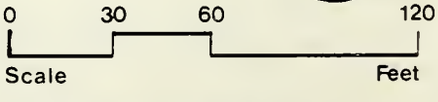
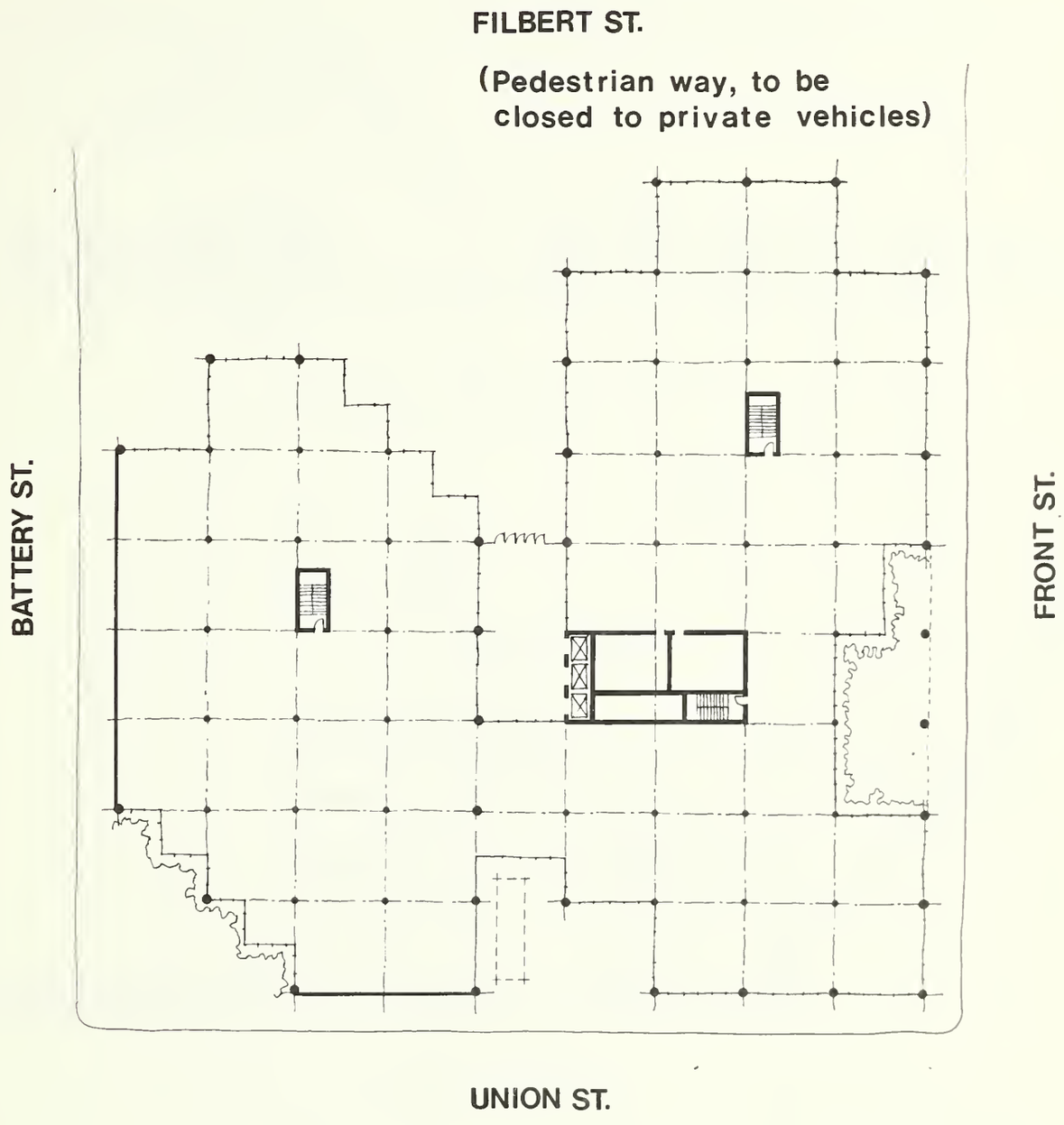


Figure No. 10



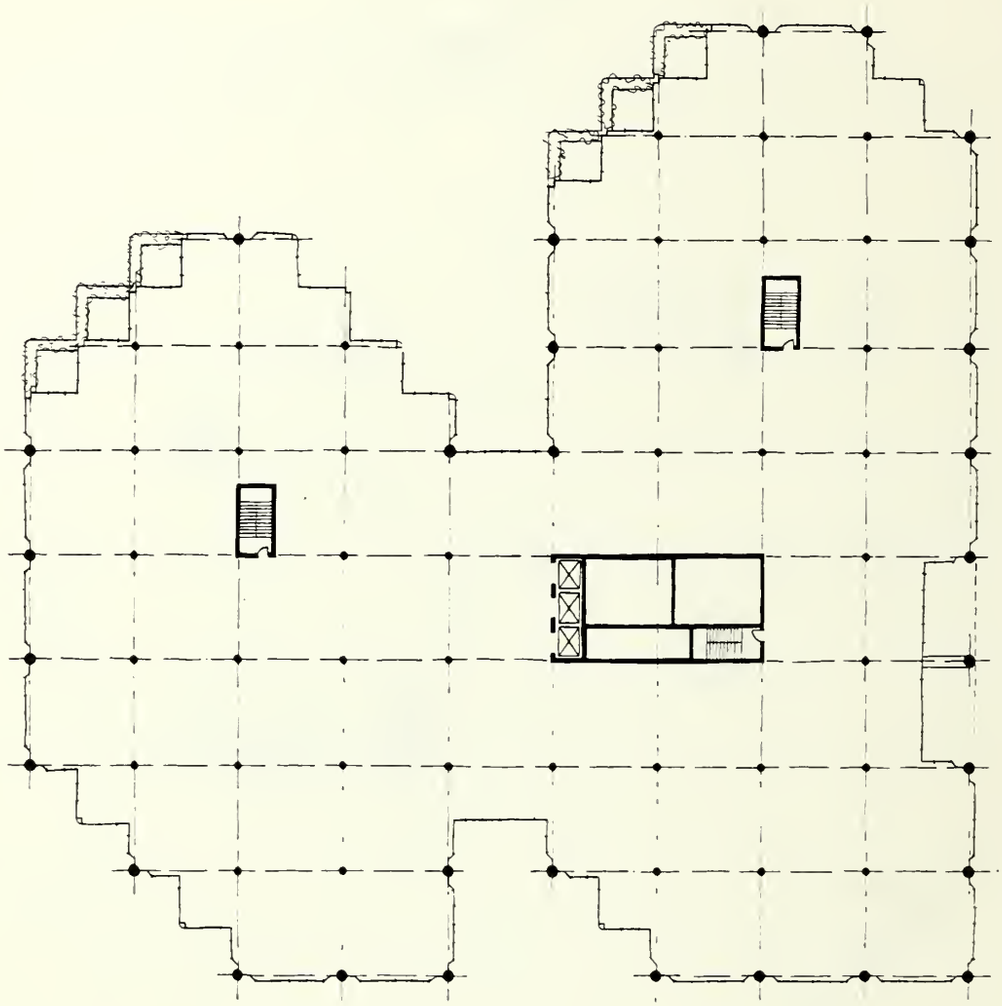
Block C Floor 1 (2 is similar)

NORTH

0 30 60 120

Scale Feet

Figure No. 11



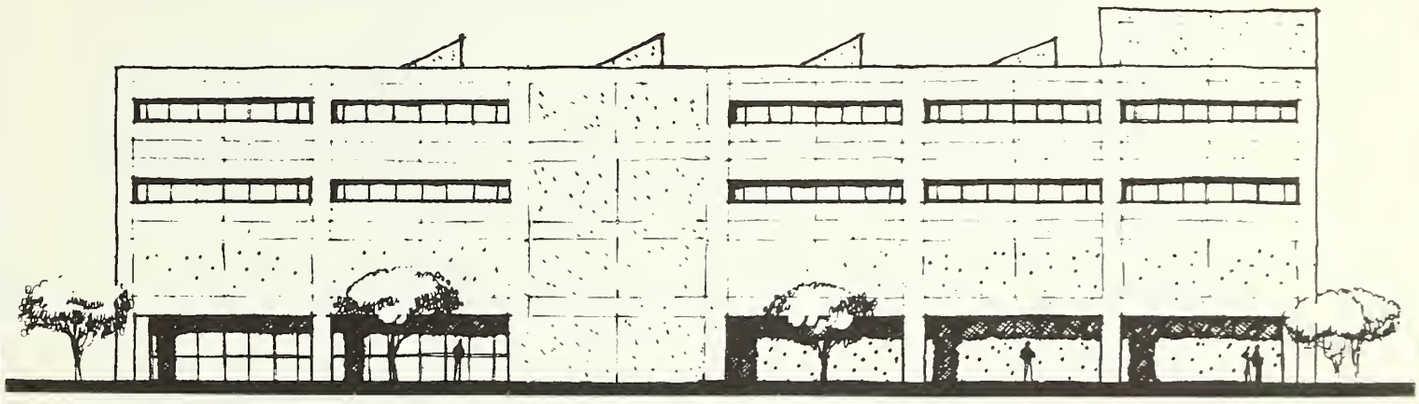
Block C Floor 3 (4 is similar)

NORTH

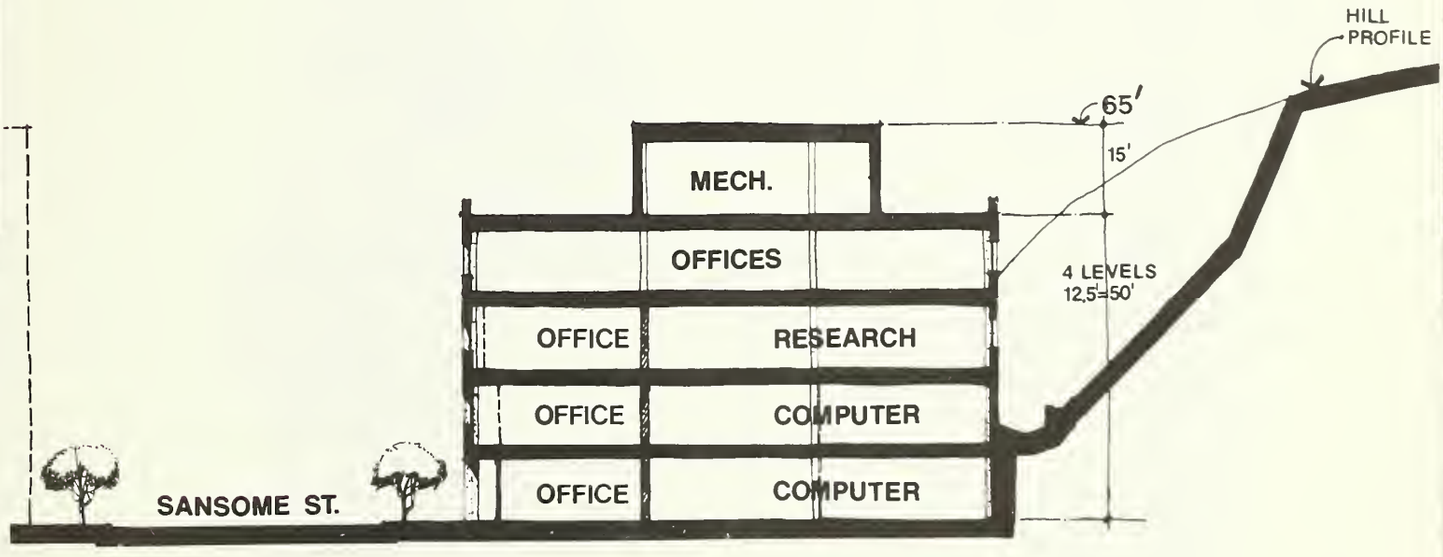
0 30 60 120

Scale Feet

Figure No.12



SANSOME STREET ELEVATION
SOUTH – NORTH



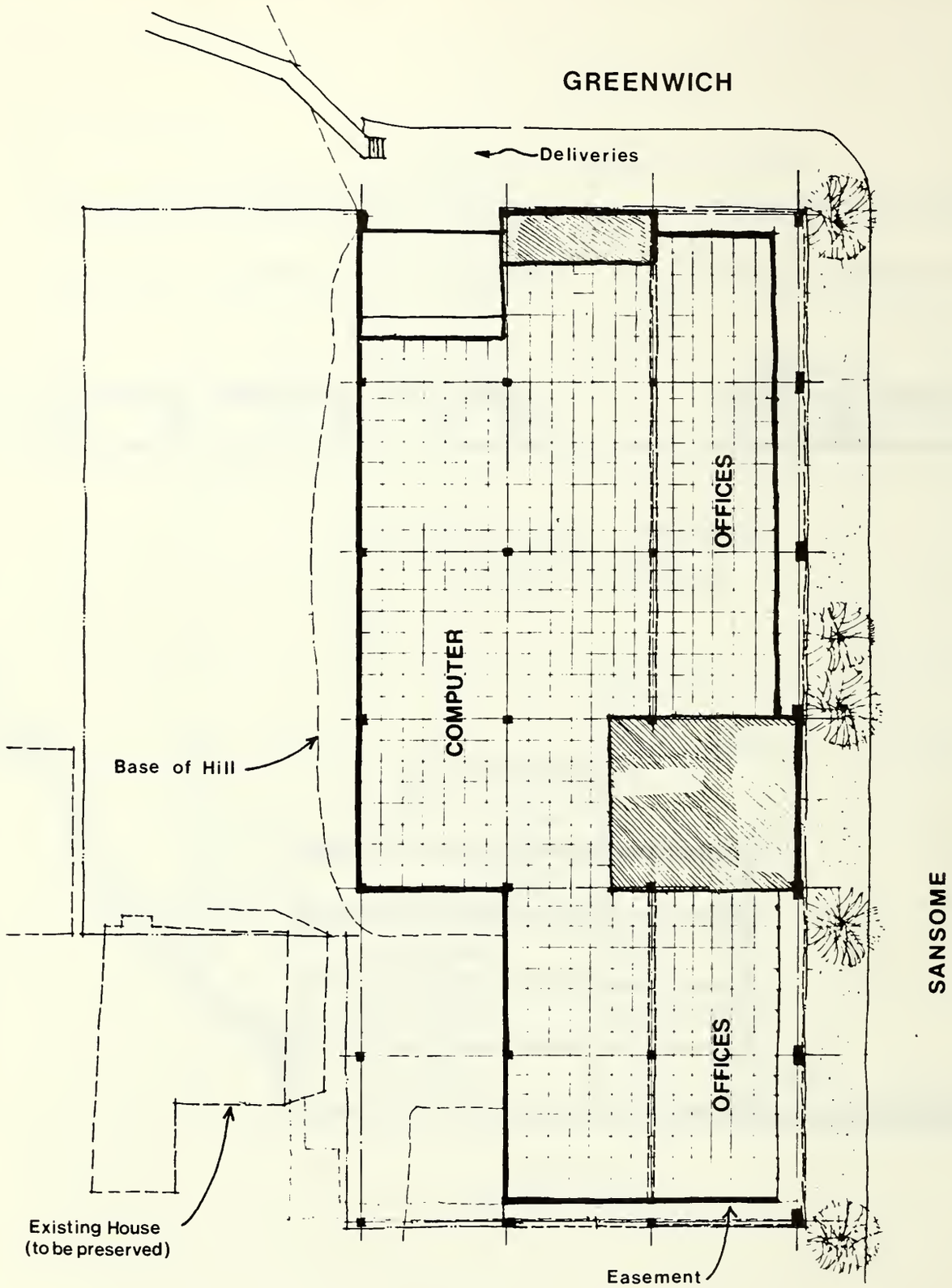
SECTION
EAST – WEST

Block E, Elevation & Section

NORTH

0 10 20 40
Scale Feet

Figure No.13

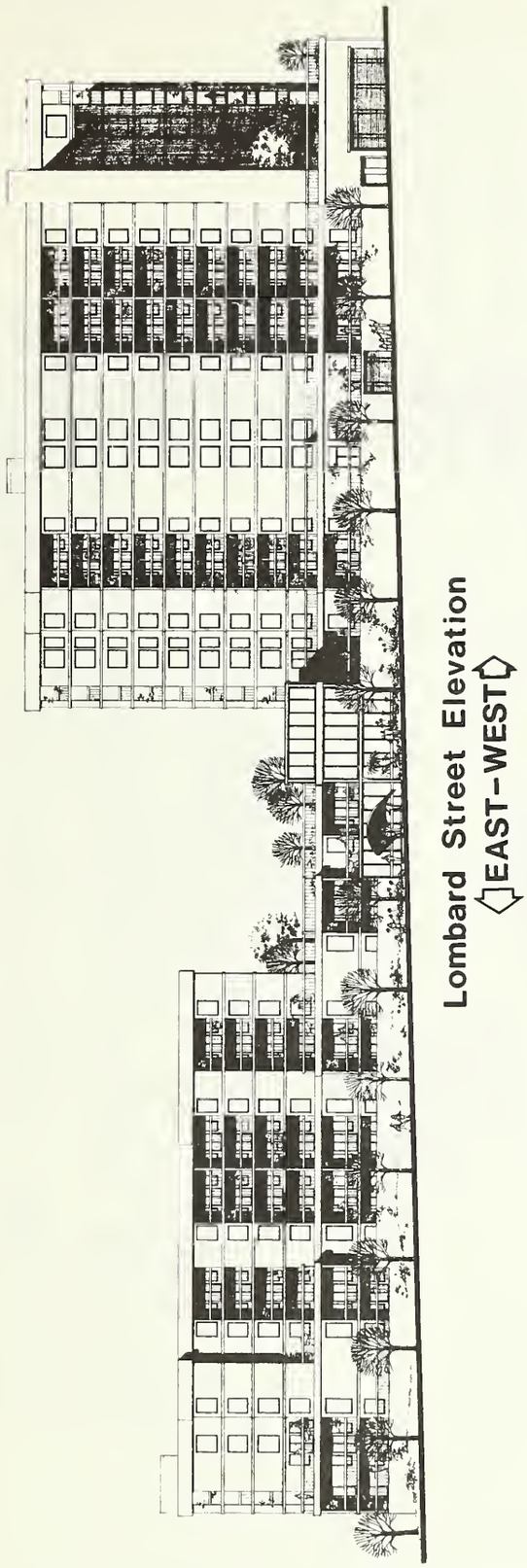


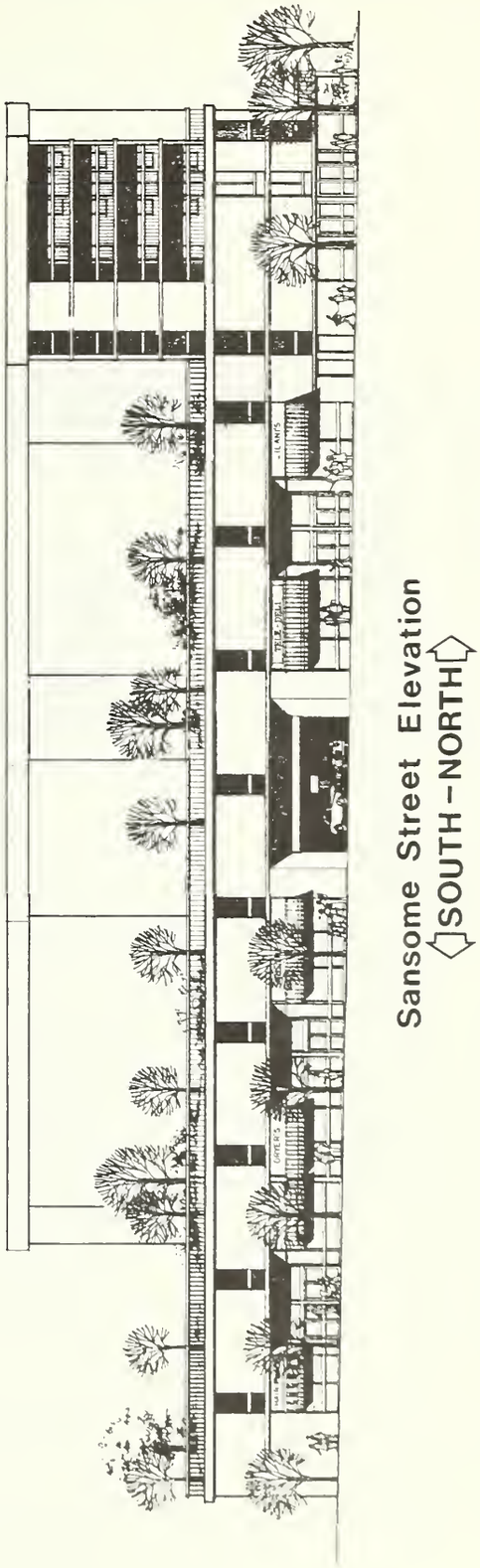
Block E Floor 1(2,3,4 are similar)

NORTH

0 10 20 40
Scale Feet

Figure No.14

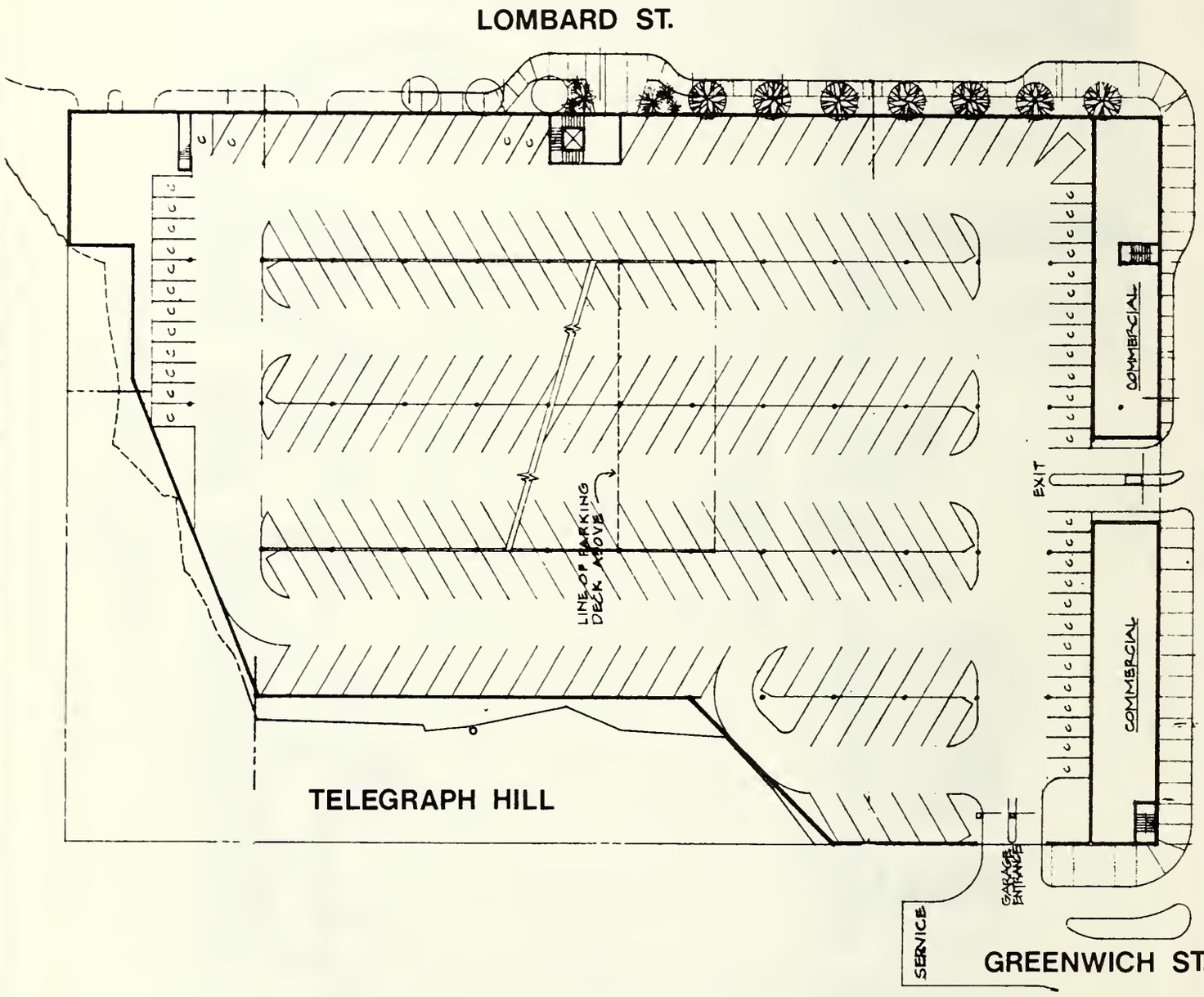




Block F Condominium
(Elevations)

0 20 40 80
Scale Feet

Figure No.15

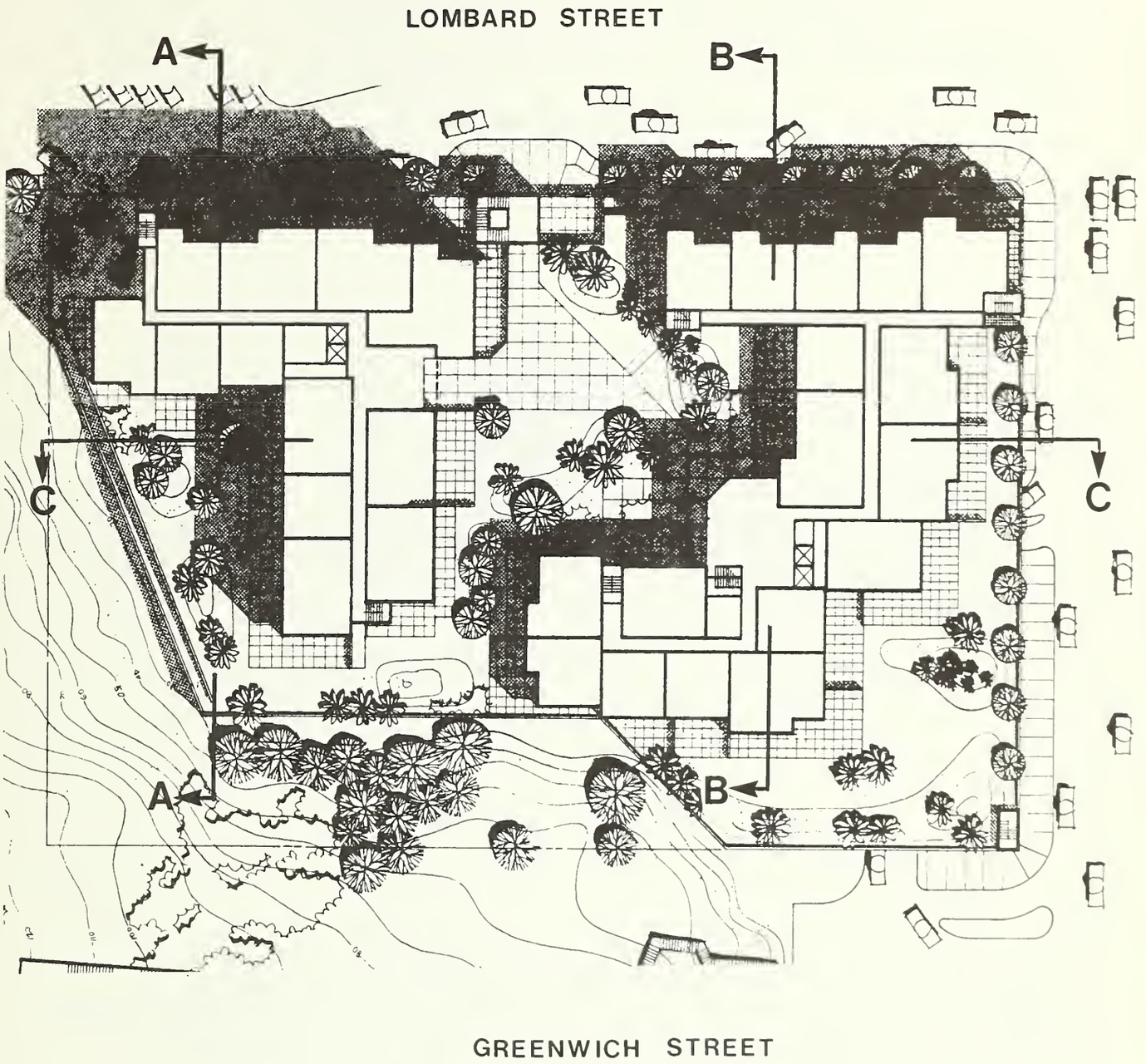


Block F, Parking Garage
(1st Level)

NORTH

0 20 40 80
Scale Feet

Figure No. 16



Block F Condominium

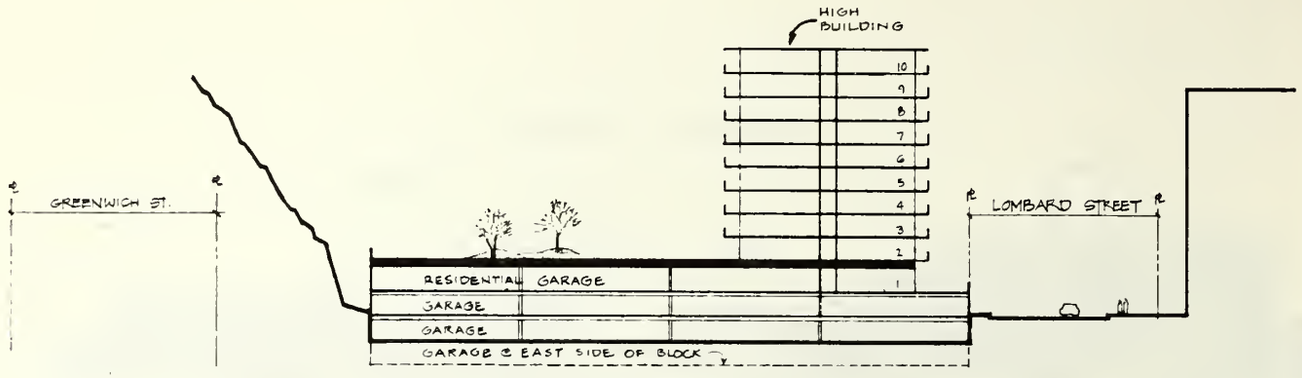
(See Figure 18 for Sections A-A, B-B and C-C)

NORTH

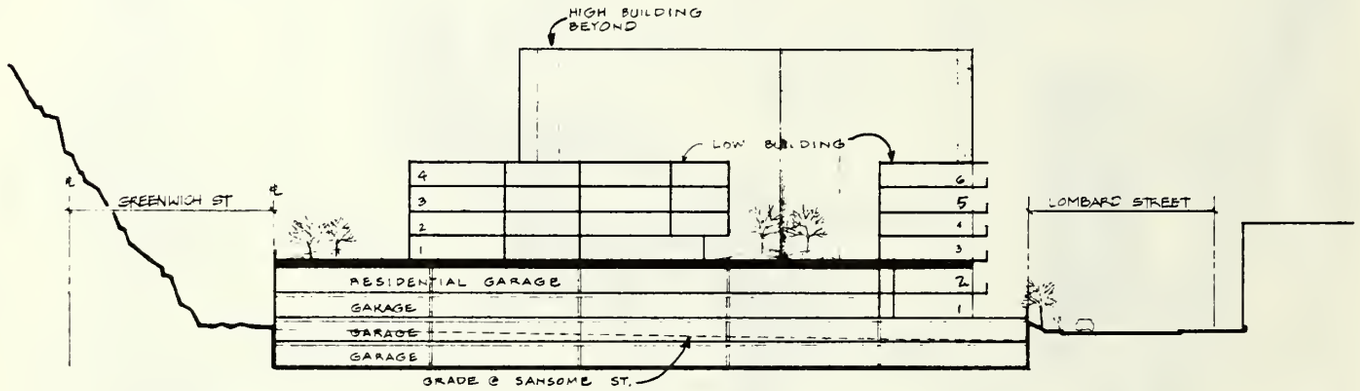
0 20 40 80

Scale Feet

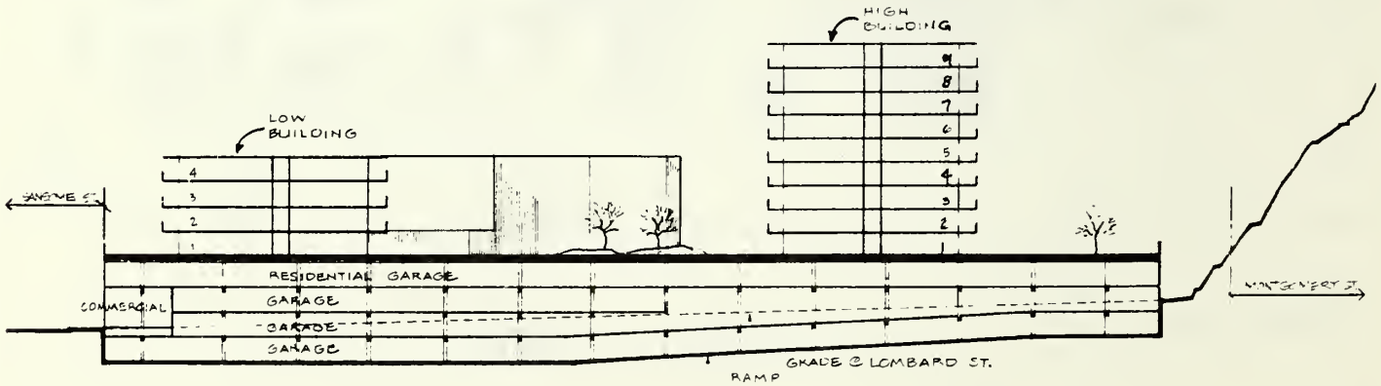
Figure No. 17



SECTION A-A (LOOKING WEST)



SECTION B-B (LOOKING WEST)



SECTION C-C (LOOKING SOUTH)

Block F Condominium

(See Figure 17 for location of sections)

NORTH

0 30 60 120

Scale Feet

Figure No.18

MONTGOMERY STREET ELEVATION

SOUTH - NORTH

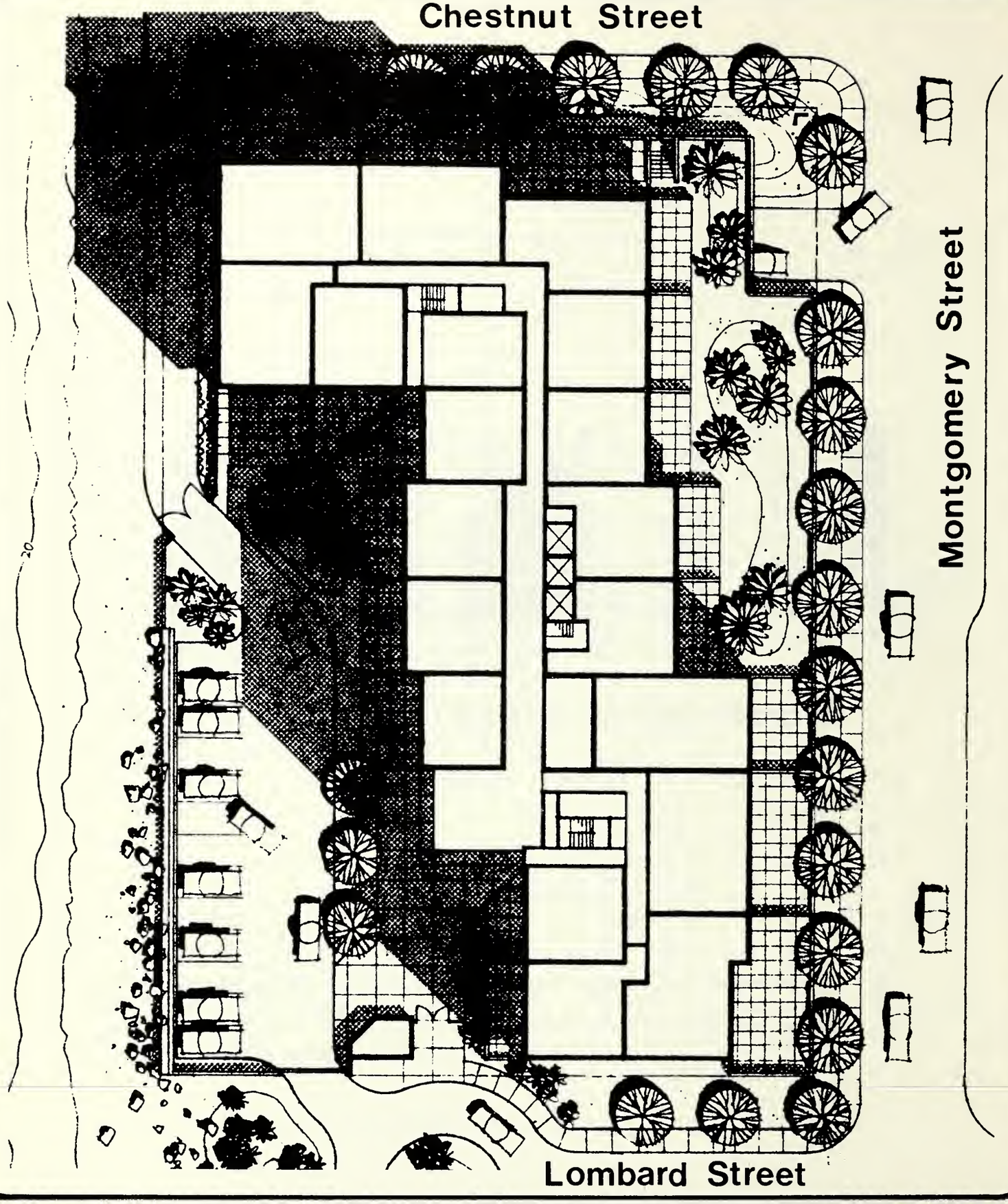
Block G Condominium

NORTH

0 20 40 80

Scale Feet

Figure No. 19



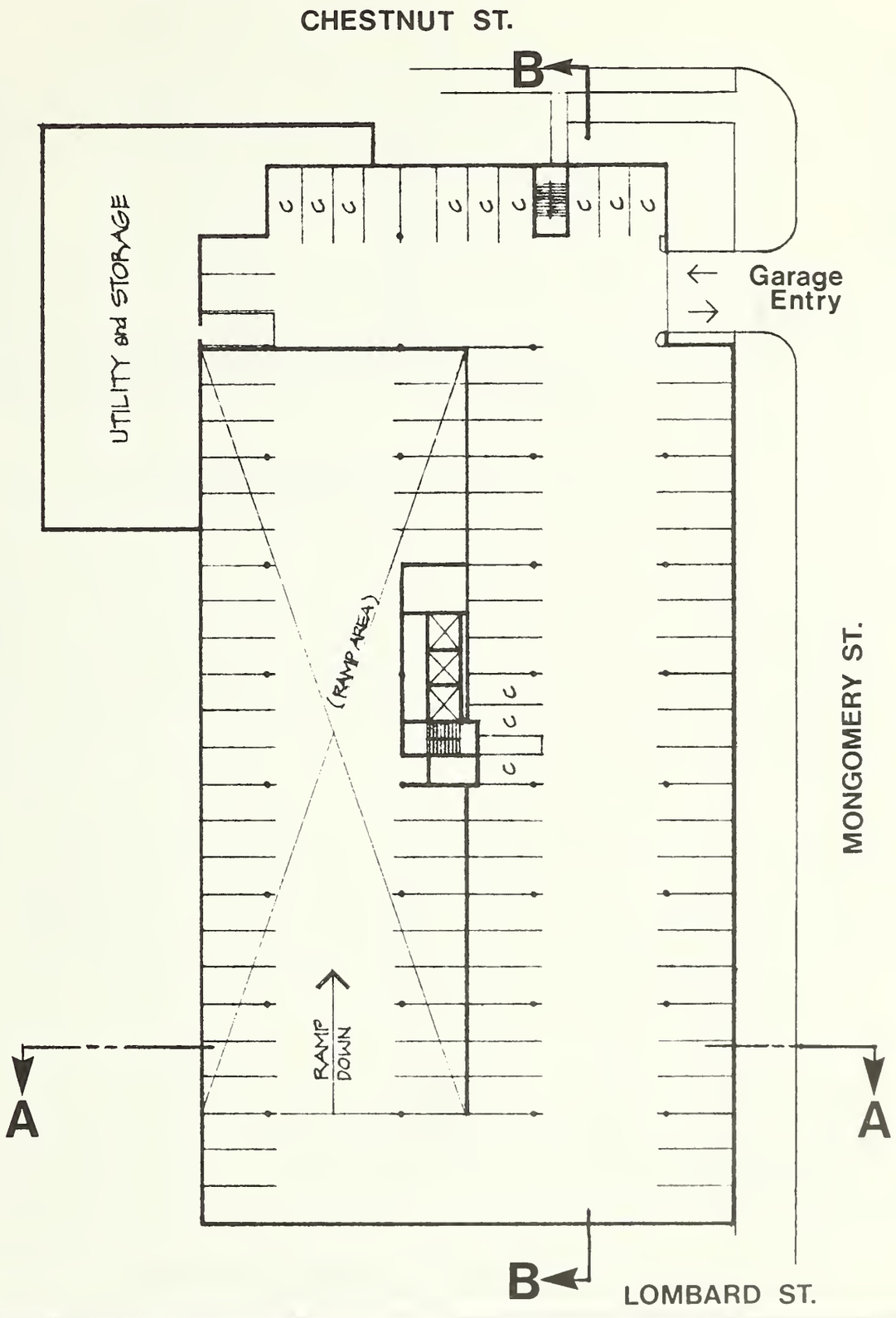
Block G Condominium
(Site Plan)

NORTH

0 20 40 80

Scale Feet

Figure No. 20

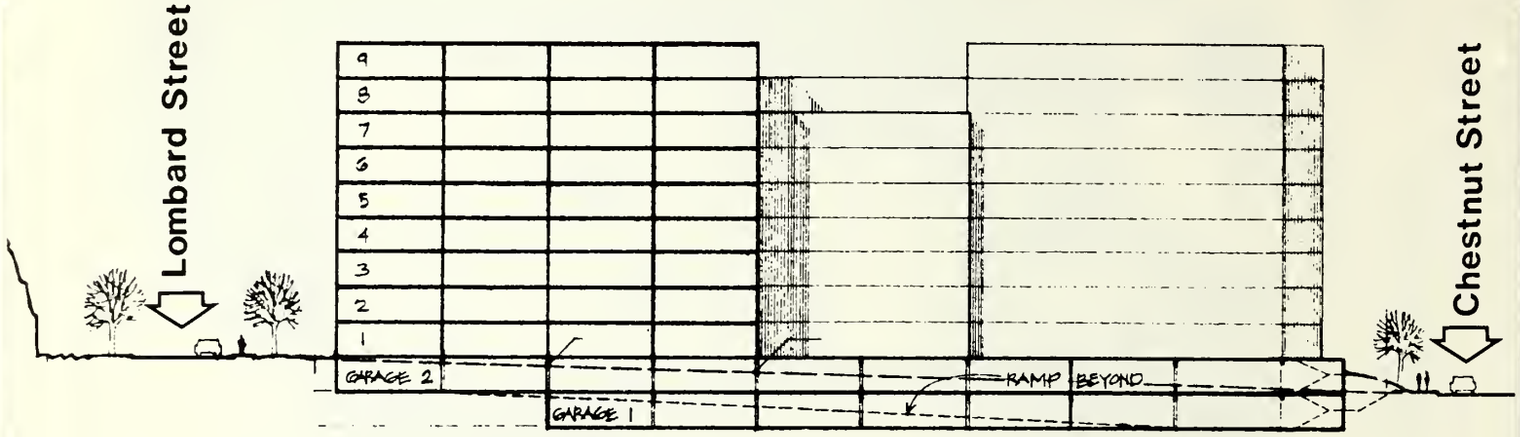


Block G, Garage Plan
(See Figure 22 for Building Sections)

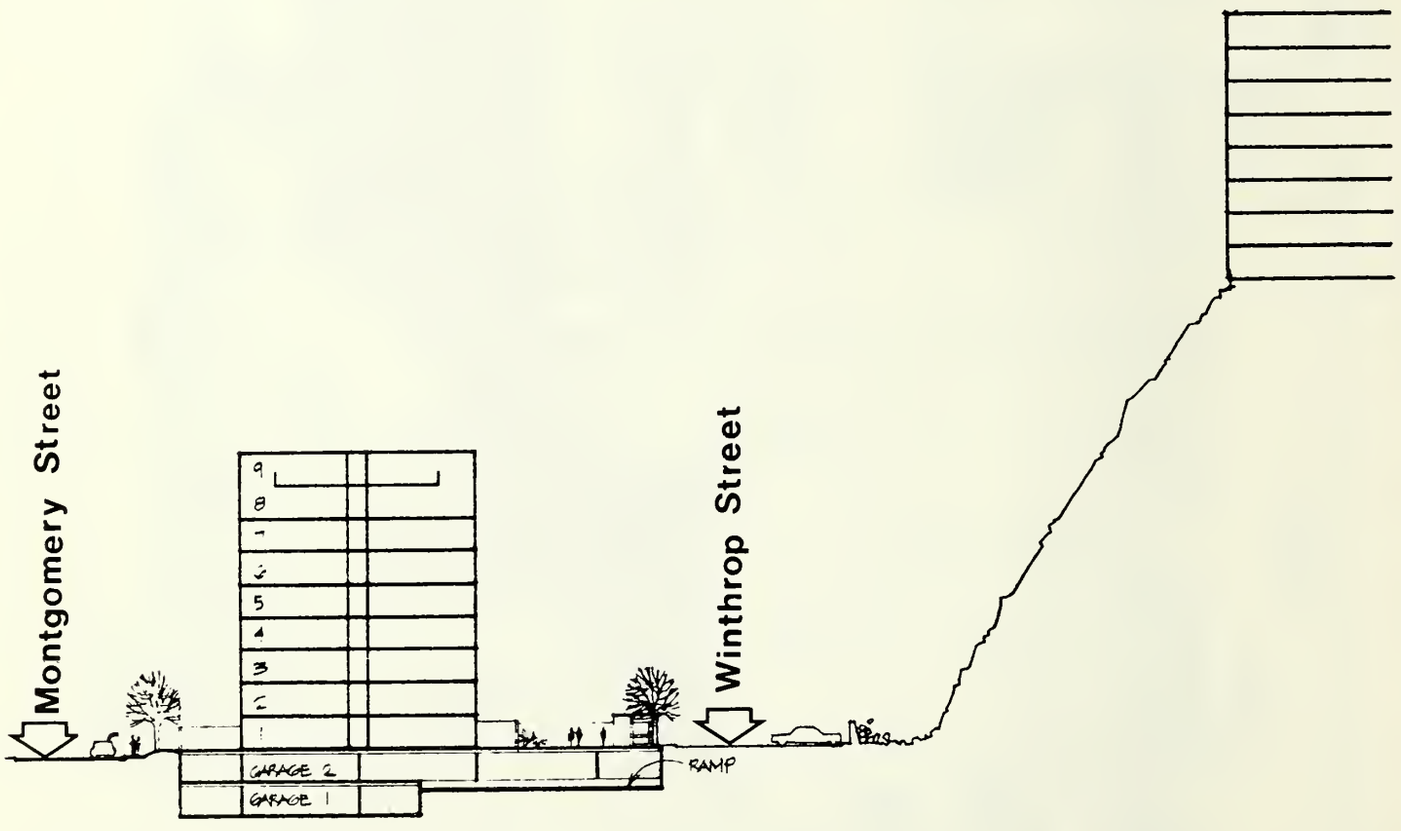
NORTH

0 20 40 60 120
Scale Feet

Figure No. 21



Section A-A (Looking West)



Section B-B (Looking South)

Block G, Building Sections

(See Figure 21 for Building Section Locations)

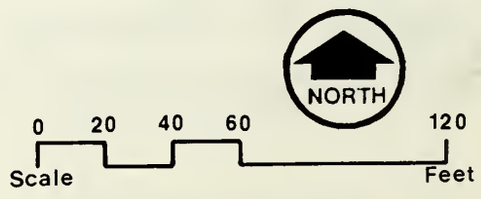


Figure No. 22

II. RELATIONSHIP TO PLANS

A. CITY AND PORT PLANS

On 19 January 1977 the San Francisco City Planning Commission adopted Resolution 7643, which amended the Master Plan of the City and County of San Francisco to include The Plan for the Northeastern Waterfront and to delete the previously adopted Northern Waterfront Plan. The new plan encompasses an area from Fisherman's Wharf to North China Basin; it was formulated to guide future development of the area in a manner consistent with the interests of San Francisco and achieve conformity with Special Area Plan No. 1: San Francisco Waterfront, prepared and adopted by the San Francisco Bay Conservation and Development Commission in 1975, as an amendment to its San Francisco Bay Plan.

The Plan for the Northeastern Waterfront contains both general objectives and policies, to be applied to the entire waterfront, and more specific policies for the Base of Telegraph Hill area. General objectives and policies include:

Land Use:

Objective: "To develop and maintain activities that will contribute significantly to the city's economic vitality and provide additional activities which strengthen the predominant uses in each sub-area of the northeastern waterfront, while limiting the concentration to preserve the environmental quality of the area."

Objective: "To diversify uses in the northeastern waterfront to expand the period of use of each sub-area and to promote maximum public use of the waterfront while enhancing its environmental quality."

Objective: "To develop limited additional office and commercial space in order to serve the city's economic needs and to encourage a mixture of uses and activities along the northeastern waterfront."

Policy: "Except on new or replacement fill, permit that additional office space development adjacent to the Downtown Office District which complements the downtown but which is of a lesser intensity and which reflects the transition between the City and the water."

Policy: "Encourage the development of additional housing wherever feasible (except on new or replacement fill), consistent with maximum maritime development."

Policy: "Preserve and expand the supply of low and moderate income housing and encourage the economic integration of housing."

Recreation:

Objective: "To strengthen and expand the recreation character of the northeastern waterfront and to develop a system of public open spaces and recreation facilities that recognizes its recreational potential, provides unity and identity to the urban area, and establishes an overall waterfront character of openness of views, water and sky and public accessibility to the water's edge."

Urban Design:

Objective: "To develop the full potential of the northeastern waterfront in accord with the unusual opportunities presented by its relation to the bay, to the operating port, fishing industry, and downtown; and to enhance its unique aesthetic qualities offered by water, topography, views of the city and bay, and its historic maritime character."

Policy: "Preserve the physical form of the waterfront and reinforce San Francisco's distinctive hill form by maintaining low structures near the water, with an increase in vertical development near hills or the downtown core area."

Policy: "Use continuous planting and other ground surface treatment to physically and visually link the waterfront with adjacent inland areas."

Transportation:

Objective: "To facilitate the movement of people and goods within the northeastern waterfront in such a way as to minimize the adverse impact of this movement."

Policy: "Limit additional parking facilities in the Northeastern Waterfront and minimize the impact of this parking. Discourage long-term parking for work trips which could be accommodated by transit. Restrict additional parking to: (1) short-term (less than four hour) parking facilities to meet needs of additional business, retail, restaurant, marina, and entertainment activities; and (2) long-term parking facilities for maritime activities, hotel and residential uses. To the extent possible, locate parking away from areas of intense pedestrian activity."

Specific Policies

Besides the more general area-wide policies, land use policies for the Base of Telegraph Hill area were adopted. General planning policies include:

Objective: "To preserve the historic maritime character of the area."

Policy: "Retain architecturally interesting or historically significant buildings. Every effort should be made to preserve the Italian Swiss Colony Building, the Pelican Paper Company Warehouse, the Trinidad Bean and Elevator Company Warehouse, and other buildings of historical and architectural interest."

Objective: "To develop a diversity of additional activities which would strengthen the existing predominant uses in the base of Telegraph Hill area and activities which would expand the period of use, but of an intensity which would provide a relief from the adjacent downtown and Fisherman's Wharf areas."

Objective: "To develop the area in such a way as to preserve and enhance the physical form of the waterfront and Telegraph Hill, and to preserve views from the Hill."

B. CITY PLANNING CODE

Land use, height and bulk restrictions, and floor area ratios (FAR) are described for the northern waterfront in the City Planning Code. Height, bulk, and FAR dispensations may be prescribed where design improvements are to be gained when deviating from strict adherence to code limits.

Land Use. All land parcels of the project site are within the C-2 Community Business District. The site is also within Northern Waterfront Special Use District No. 3 (see Section 240.3 of the Planning Code and Zoning Map No. 1Sub). Development in the area is subject to the general provisions outlined in the Code for C-2 districts, but these may be superseded by additional regulations imposed by the provisions of the Special Use District.

Principal uses permitted in the C-2 district (Sections 212-227 of the Planning Code) include dwellings; institutions and schools; retail business or personal service establishments, not limited to sales or services primarily for residents in the immediate vicinity, and not restricted to sale of new commodities; professional and business offices; and assembly and entertainment facilities, including club house, lodge building, meeting hall, theater, recreation building, amusement enterprise, and private noncommercial recreational open space.

The Special Use District also permits industrial and commercial operations directly relating to water-borne commerce or navigation and wholesale establishments within an enclosed building as principal permitted uses, and prescribes conformance with the Plan for the Northeastern Waterfront.

The west boundary of the project site joins the Telegraph Hill area, which is under different zoning restrictions, as shown in Figure 2, page 11. The two-block area surrounding Coit Tower is zoned P (Public Use), which applies to land that is owned by a governmental agency and is in some form of public use, including open space. Remaining areas west of the site were zoned R-4, with dwelling structures, schools, churches, and nonindustrial public buildings the principal permitted uses.

Section 130 of the Planning Code indicates that the number of dwelling units permitted on any lot in a C district must be the same as for a permitted transitional use in the nearest R (residential) district. The R district nearest to the project site was R-4, which limited the number of units to one for each 200 square feet of lot area.

The residential rezoning adopted by the City,[1] to go into effect on 6 November 1978, enacted a zoning change from R-4 to RM-2 and RH-3 west of the project site. The density (number of dwelling units permitted) has been lowered to one dwelling unit per 600 sq. ft. of lot area in the RM-2 area west of Block G and to one dwelling unit per 1,000 sq. ft. of lot area (with Conditional Use approval) in the RH-3 area west of Blocks E, B, and A.

In the Northern Waterfront Special Use District No. 3, any development of three acres or more, regardless of the proposed use, is automatically subject to the conditional use regulations of the Planning Code as a Planned Unit Development. As part of this procedure the development is subject to review by the Planning Commission for conformity with the Northeastern Waterfront Plan.

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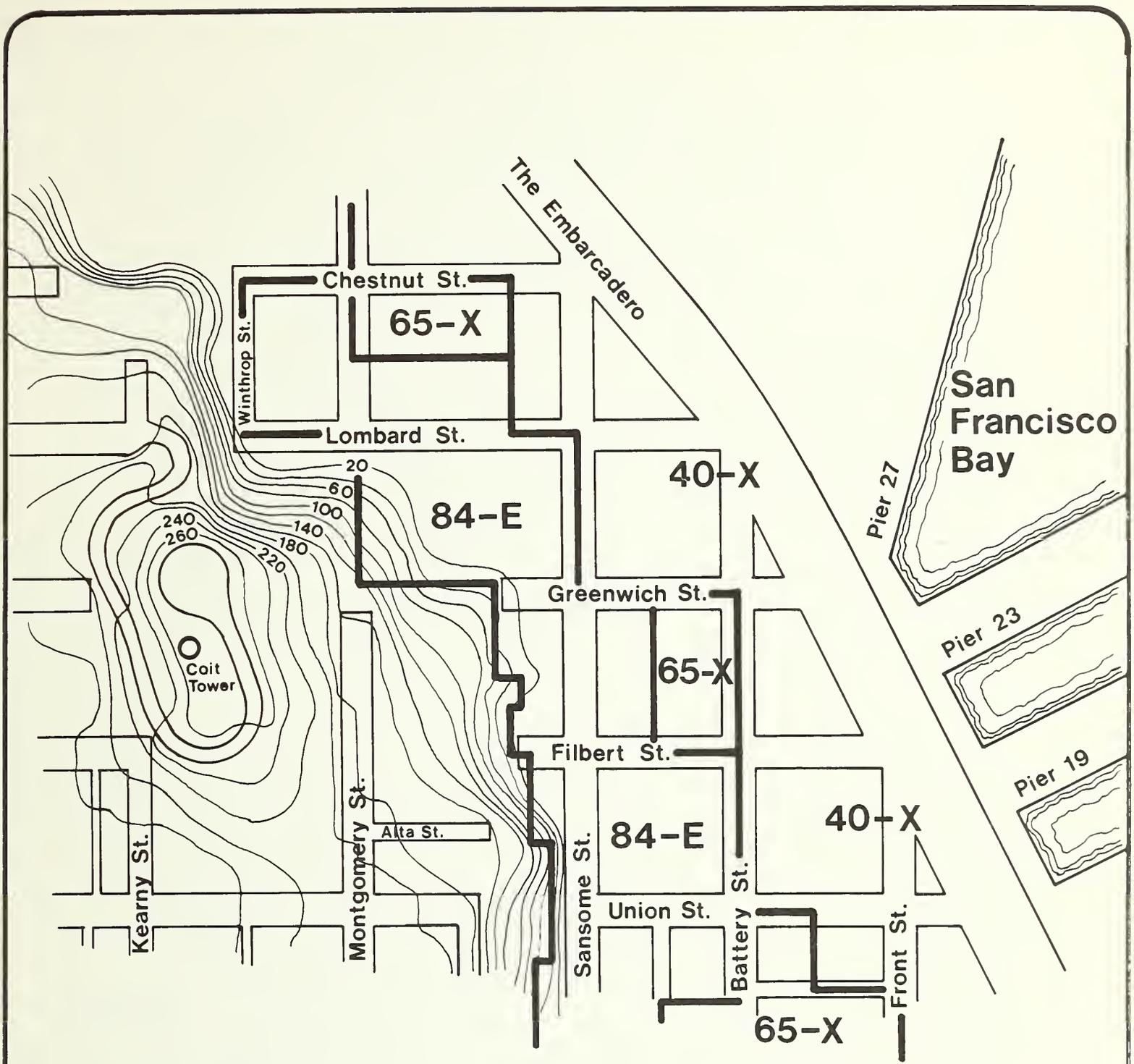
[1]Ordinances 443-78 and 444-78, in effect 6 November 1978.

Height and Bulk Restrictions. The following height and bulk restrictions on buildings apply to the site under current C-2 zoning, as shown in Figure 23, page 43:

Height and Bulk District	Restriction
40-X	40-foot height limit; no bulk restriction
65-X	65-foot height limit; no bulk restriction
84-E	84-foot height limit; horizontal dimension limited to a maximum length of 110 feet; maximum diagonal of 140 feet above 65 feet.

Floor Area Ratio. Floor area ratio (FAR) is the ratio of the gross floor area of all of the buildings on a lot to the area of the lot. Section 240.2(f) of the Planning Code permits a FAR of 5.0:1.0 (i.e., buildings may contain a total gross floor area up to five times the area of the lot) on each of the lots on the project site. In addition, a bonus of 25 percent may be obtained for the portion of the property that qualifies under the code as a corner lot (area within 125 feet of a corner).



Height & Bulk Districts of the Project Area

Note: See Section II-B, page 40, for district descriptions

Source: Zoning Map of the City and County of San Francisco, 1975

NORTH

0 200 400 600

Scale Feet

Figure No. 23

III. ENVIRONMENTAL SETTING

A. TOPOGRAPHY

The area of the proposed project is bordered on the east by the San Francisco Bay waterfront and on the west by the quarried slopes of Telegraph Hill. Elevations range from 25 feet above mean sea level near Lombard and Montgomery Streets to 9 feet above mean sea level near Greenwich Street and the Embarcadero.[1] Telegraph Hill rises to 275 feet above mean sea level (refer to Topographic Map, Figure 24, page 45).

B. GEOLOGY

San Francisco Peninsula is part of the California Coast Ranges, which consist of a mixture of Cretaceous rocks (100 to 150 million years old) of sandstone, shales, cherts, and volcanic rocks. Telegraph Hill consists of hard, resistant sandstone with some interbedded shale. Between Sansome and Battery Streets, the sandstone grades into predominantly shale with thin layers of sandstone toward the Bay. Overlying the shale are Bay muds of Quaternary age (less than two million years old), consisting of plastic, grey, silty clay with a few layers of sand and peat. The Bay muds are overlain by approximately 10 feet of artificial fill extending from the 1853 shoreline (trending southeasterly from the corner of Chestnut and Montgomery Streets, along the foot

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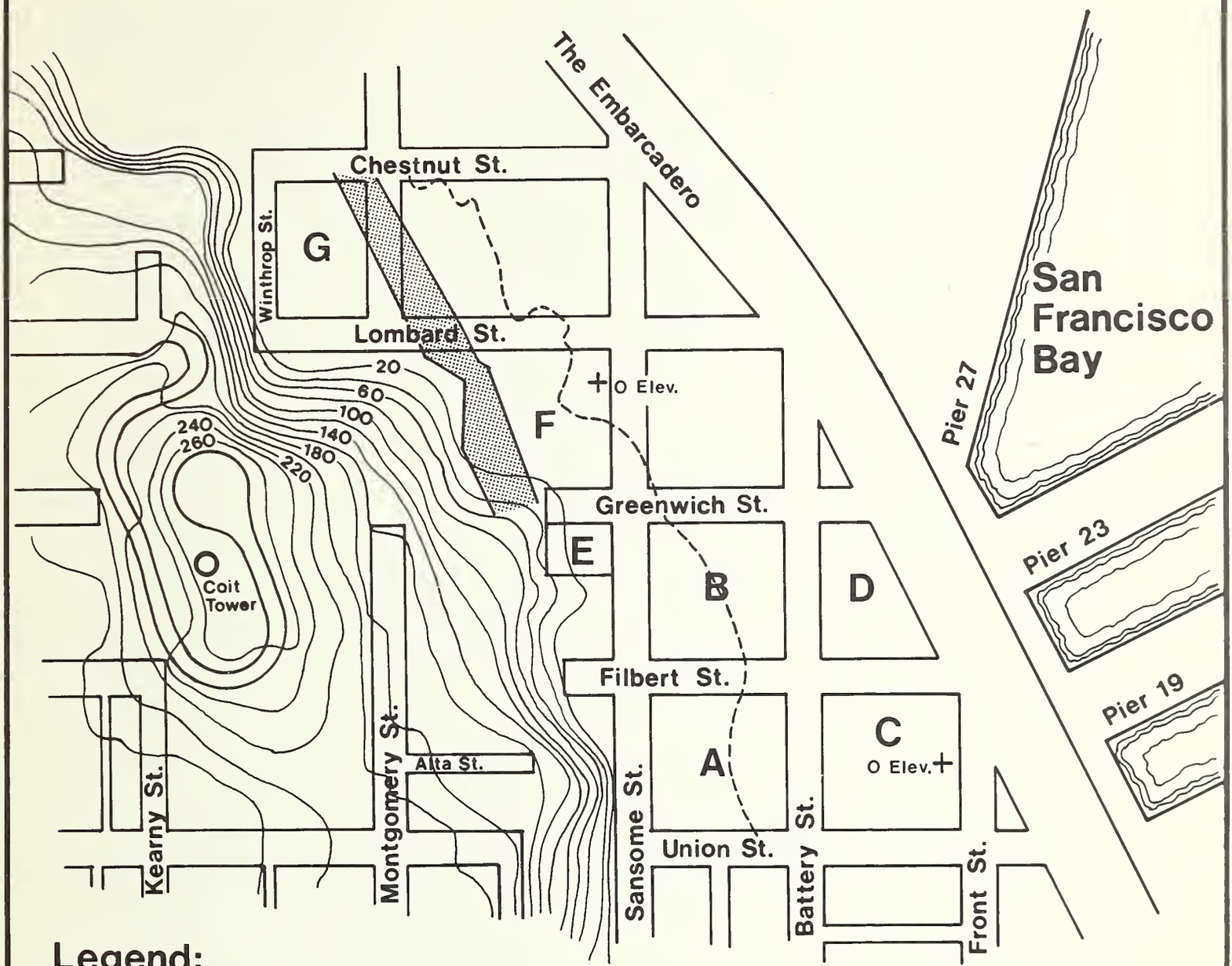
[1] J. Schlocker, Geology of the San Francisco North Quadrangle, California, U.S. Department of the Interior, Geological Survey Professional Paper No. 782, 1974.



Legend:

Approximate Location of Shear Zone.

Approximate Shoreline, 1853, (shoreline fill east of line).

140 Contour Line with Elevation Shown, (based on City datum, 8.6 feet above mean sea level)

\+ Spot Elevation.

Topography

NORTH

0 200 400 600

Scale Feet

Source: San Francisco, Working Area Land Use Study, Map File 825.W-1, 1967 & Dames and Moore Report 6017-03

Figure No. 24

of Telegraph Hill, to the corner of Union and Battery Streets) to the Bay. The fill is predominantly dune sand, but includes silt, clay, rock debris, and organic wastes.[1]

The steep, quarried slopes of Telegraph Hill bordering the project site are deeply fractured in some places from weathering. A zone of fractured sandstone traverses Block F and the northeast corner of Block G,[2] (See Figure 24, page 45). Drainage water trapped in these fractures results in increased hydrostatic pressure, which contributes to the instability of the slope. Evidence of slope instability can be seen at the southwest corner of Block G, where a slide has occurred. The slide has been active over the past years, with a rate of recession of approximately one foot per year from the top of the hill. The installation of eleven 200-feet-deep wells on the top of the hill in 1972 may have reduced the rate of recession. Partly to mitigate the adverse effects of slope instability, retaining walls have been built along part of the foot of Telegraph Hill.

In February of 1978, following rainstorms, a rockfall occurred off Telegraph Hill on Sansome Street near Union Street. The boulders progressing downslope resulted in the destruction of a post, a wire-mesh fence, and some damage to a concrete retaining wall. Sansome Street was closed off for a period during the day of the rockfall to clear the debris; parking along the west side of Sansome Street is no longer permitted. The engineering firm of Dames and Moore is currently under contract with the City of San Francisco to investigate the future stability of the east side of Telegraph Hill.

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[1]J. Schlocker, Geology of the San Francisco North Quadrangle, 1974.

[2]URS/John A. Blume & Associates, San Francisco Seismic Safety Investigation, prepared for the San Francisco Department of City Planning, June 1974.

C. SEISMICITY

San Francisco is located in one of the most seismically active areas in the world. To the west is the active San Andreas fault, extending in a northwesterly direction through most of California or just off the coast. The fault is approximately seven miles west of the project site (refer to Active Fault Zones Map, Figure 25, page 48). Since the 1906 San Francisco earthquake (estimated 8.25 on the Richter scale),[1] which caused up to 21 feet of lateral displacement and three feet of vertical displacement, resulting in extensive structural damage and soil liquefaction, no seismic activity of similar magnitude or movement has been observed in the vicinity of San Francisco. This, however, does not mean that no activity is anticipated in the future; in fact, stresses are believed to accumulate along fault planes such that release of built-up stresses can be expected at some future date.

The Hayward fault, which passes about 15 miles northeast of the project site at its closest point, has not shown evidence of linear displacement recently, but creep is occurring at a rate of one-half foot in the last 50 years. The Calaveras fault, which passes about 25 miles east of the site, has also shown evidence of creep, especially near its southern end.

The project area has been divided into areas[2] according to intensity of future ground shaking (see Figure 26a, page 50). The expected ground shaking varies from east to west from "violent" (Intensity Level B), indicating fairly general collapse of brick and frame structures when not unusually

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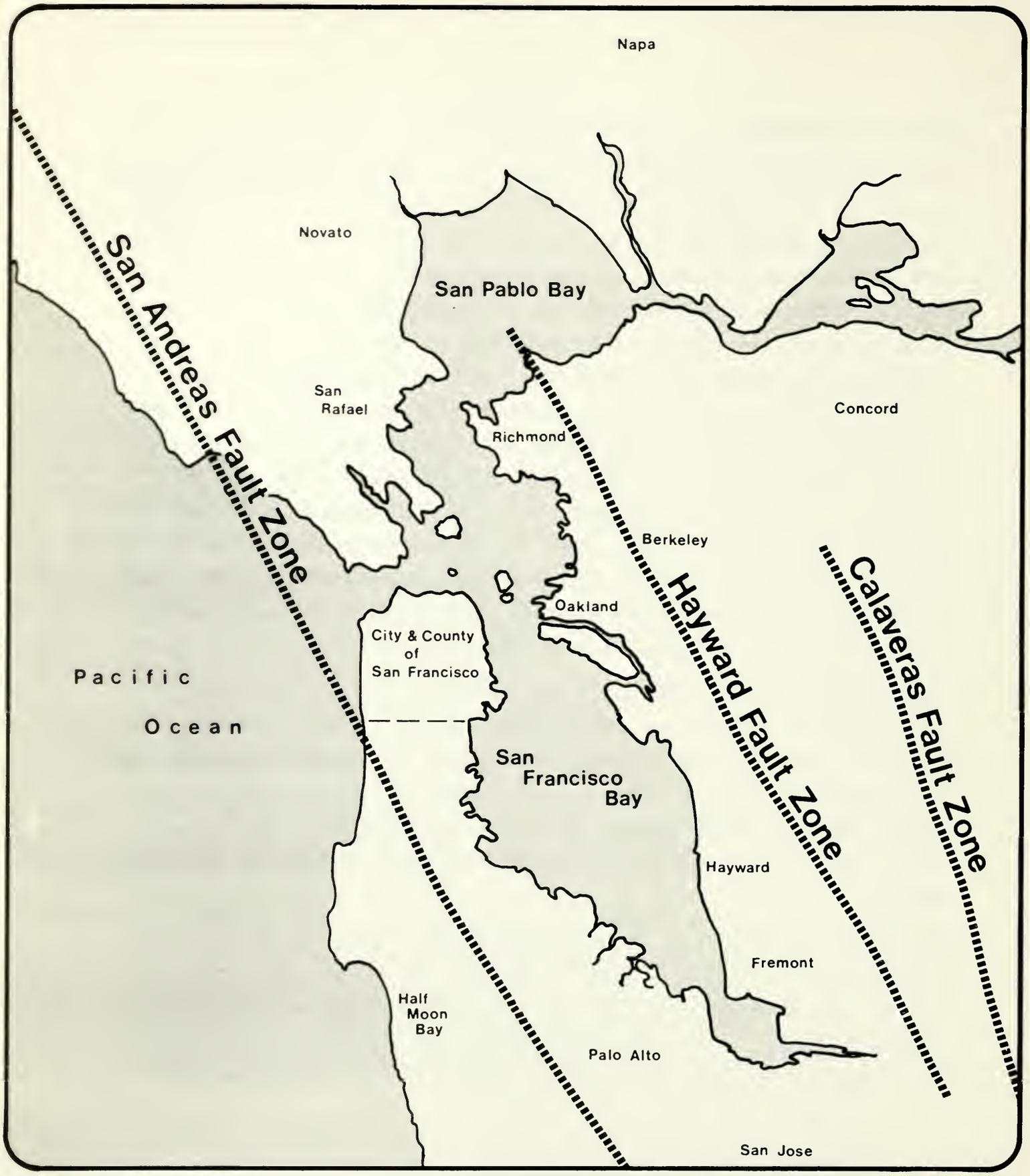
[1] Richter Scale: A logarithmic scale developed by Charles Richter to measure earthquake magnitude by the energy released, as opposed to earthquake intensity as determined by effects on people, structures, and earth materials.

[2] URS/John A. Blume & Associates, San Francisco Seismic Safety Investigation, op. cit.



Active Fault Zones in the San Francisco Bay Area

NORTH

0 4 8 16

Scale Miles

Source: U.S. Geological Survey/ Brown, 1970

Figure No. 25

strong, serious cracking of better buildings, lateral displacement of streets, bending of rails, and ground fissuring, to "weak" (Intensity Level E), indicating occasional fall of brick chimneys and plaster.

D. HYDROLOGY

The project site contains no surface water resources; San Francisco Bay is immediately adjacent to the eastern border of the project area.

The natural drainage of the site results in a generally northeast flow of surface runoff from rainstorms. The eastern side of Telegraph Hill also contributes surface runoff to the site during storms. The area is served by the City's combined sewerage system, in which sewers transport both domestic and industrial dry-weather flows and rainwater runoff in wet weather (see Section III.M, Community Services, Subsection 1, Wastewater, page 93). In dry weather. wastewater is transported via a large main under Sansome Street to the North Point Water Pollution Control Plant. During wet weather (about 80 times a year), the flow which exceeds the sewerage capacity overflows and is discharged directly to San Francisco Bay without treatment, via an outfall at Greenwich Street.[1]

Sewer systems in San Francisco are generally designed to handle the amount of runoff that would result from a five-year storm.[2] The percent adequacy of any sewer is defined as the ratio of its actual capacity to the amount of runoff

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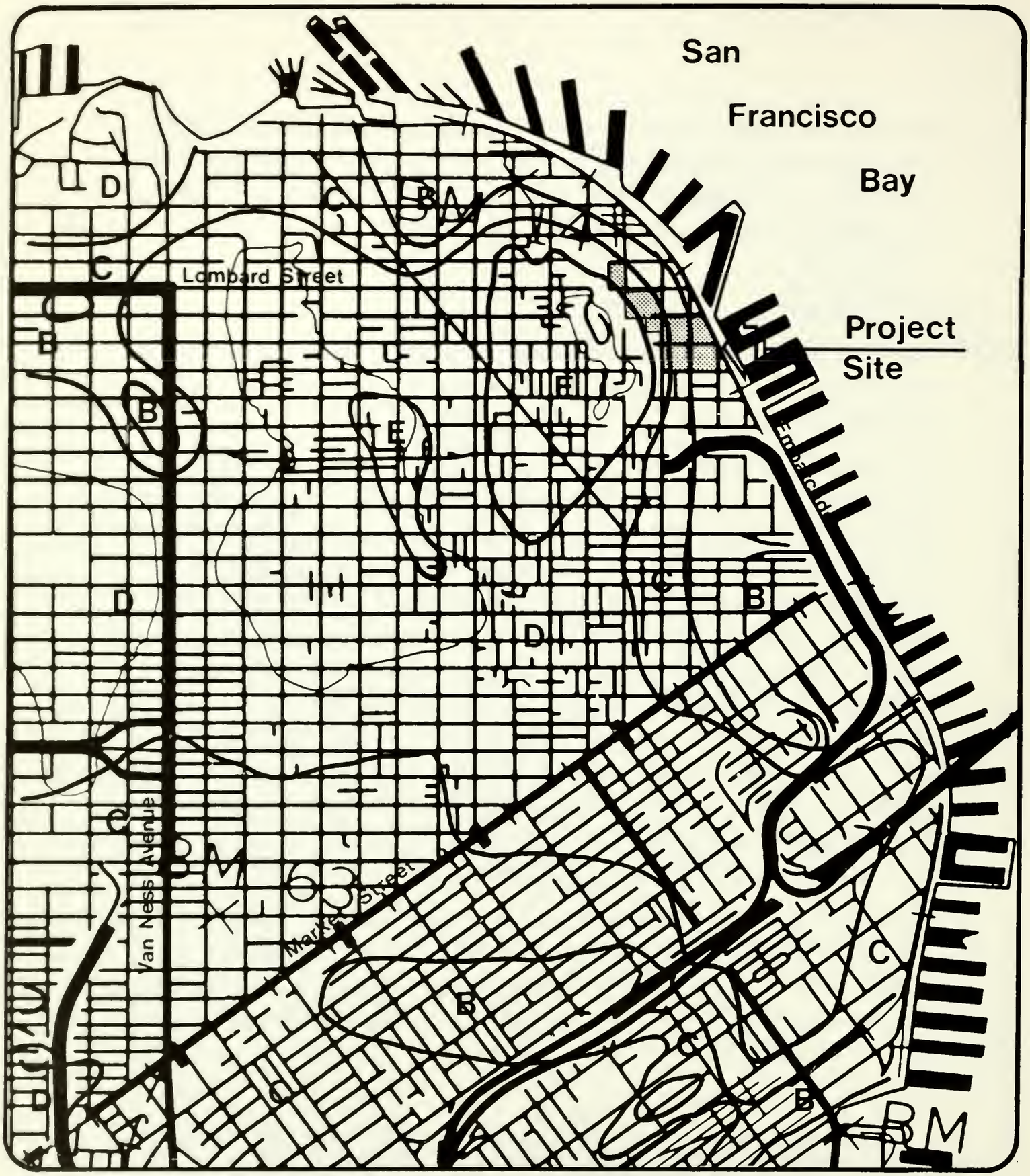
[1]Mervin Francies, Associate Engineer, San Francisco Department of Public Works, Bureau of Sanitary Engineering, Interview, 31 August 1977.

[2]The five-year storm represents the maximum rainstorm that will occur on the average of once every five years.



Estimated Intensity of Future Ground Shaking

(Refer to Legend, Figure26b)

Source: San Francisco Seismic Safety Investigation, John A. Blume & Associates, June, 1974

Figure No. 26 a

A Very violent. Cracking and shearing of rock masses. Deep and extended fissuring in soil, many large landslides and rockfalls.

B Violent. Fairly general collapse of brick and frame structures when not unusually strong. Serious cracking of better buildings. Lateral displacement of streets, bending of rails and ground fissuring.

C Very strong. Masonry badly cracked with occasional collapse. Frame buildings lurched when on weak underpinning with occasional collapse.

D Strong. General but not universal fall of brick chimneys. Cracks in masonry and brick work.

E Weak. Occasional fall of brick chimneys and plaster.

NOTE: Intensities are given for earthquakes similar to the 1906 event in Magnitude and proximity to San Francisco.

Legend:

Estimated Intensity of Future Ground Shaking

Figure No. 26b

resulting from a five-year storm. Runoff water exceeding the capacity of the existing systems flows down City streets and collects at low points.

Storms with more precipitation than the five-year storm may result in system overload and subsequent ponding problems, even with systems considered "adequate." For example, a 100-year storm would produce about 170 percent of the rainfall that an "adequate" system can handle.[1]

During major rainstorms in 1952, 1956, and 1958, much of eastern San Francisco along the Embarcadero was subject to ponding problems.[2] No data are available, however, that indicate which areas at the project site would experience particular problems.

In addition to storm runoff, possible flood hazards to coastal areas include exceptionally high tides and tsunamis.[3] The 100-year high tide would reach an elevation of about 5.1 feet above mean sea level. The estimated 100-year wave run-up from a tsunami would be about 6.1 feet above mean sea level; the estimated 500-year tsunami would have a run-up of 11 feet above mean sea level.[4]

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[1]California Department of Water Resources, Summary of Short-Duration Precipitation Frequency in the San Francisco Bay Area, December 1974.

[2]Nate Lee and Harold Coffee, engineers, San Francisco Department of Public Works, Bureau of Sanitary Engineering, telephone conversations, 31 August 1977.

[3]Tsunamis are long-period waves generated by earthquakes, undersea landslides, or volcanoes; upon reaching the shallow water of coastal areas, the waves greatly increase in height and may cause localized flooding.

[4]A. W. Garcia and J. R. Houston, Tsunami Predictions for Monterey and San Francisco Bays and Puget Sound, U.S. Army Corps of Engineers Technical Report H-75-17, 1975.

Existing data indicate that the ground-water table is close to the surface on the part of the site underlain directly by bedrock (areas immediately adjacent to Telegraph Hill) and is approximately 2.6 feet above mean sea level under the artificial fill.[1] The ground water is not used for drinking as drinking water for San Francisco is imported, primarily from Hetch Hetchy Reservoir in the Sierra Nevada. At the foot of Telegraph Hill, in the northwestern corner of Block F, is a 2,000-square-foot ponded area with abundant vegetation. The pond is probably a result of drainage from garden irrigation at private residences uphill.

E. ATMOSPHERE

1. Climate

San Francisco's climate is dominated by the sea breeze characteristic of marine climates. As a result of this steady stream of marine air, there are few extremes of heat or cold. Temperatures exceed 90 degrees on an average of once a year and drop below freezing less than once a year. The warmest month is September, with an average daily maximum of 69°F; the coolest is January, with an average daily maximum of 56°F.

Winds in San Francisco are generally from a westerly direction and are persistent from May to August. During the rainy period (October to April), the strongest winds flow from the south, as well as from the west and northwest. A summary of climatic data for San Francisco is contained in Table 1, page 54.

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[1] San Francisco Department of City Planning, Draft Environmental Impact Report: Greenwich Square, 5 June 1973.

TABLE 1

Climatological Data for San Francisco

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
Average Temperature (^{O}F)	50.2	53.0	54.4	55.6	56.9	58.8	58.8	59.4	61.8	61.0	57.0	51.6	56.5
Precipitation (inches)	4.7	3.6	3.0	1.5	.6	.2	0.0	0.0	.3	1.0	2.4	4.3	21.6
Mean Wind Speed (mph)	6.7	7.5	8.5	9.5	10.4	10.9	11.2	10.5	9.1	7.6	6.3	6.5	8.7
Prevailing Wind Direction	N	W	W	W	W	W	W	W	W	W	W	W	W
Percentage of Possible Sunshine	56.0	62.0	69.0	73.0	72.0	72.0	66.0	65.0	72.0	71.0	63.0	53.0	67.0

Source: U.S. Department of Commerce, Local Climatological Data: San Francisco, California (Federal Office Building), 1970.

Telegraph Hill, with an elevation of about 275 feet above sea level, helps determine the microclimate of the site by decreasing wind speeds in its southwestern area and causing the westerly winds coming off the Pacific Ocean to flow from a northwesterly direction across the site.

2. Air Quality

San Francisco has persistent summer winds and is positioned upwind of major pollutant sources. Nevertheless, there are periods, most often in fall and winter, when the air becomes stagnant. At these times the entire Bay Area has poor air quality.

The prevailing wind pattern in the Bay Area causes deterioration of air quality east and south of San Francisco. Table 2 shows that areas downwind of San Francisco have more severe air quality problems than San Francisco.

F. FLORA AND FAUNA

Plants in the project area are primarily introduced species of perennial grasses and wild anise emerging from cracks in the pavements, London plane trees (Platinus) along Sansome Street, and trees planted for landscaping around the Telegraph Landing development, in the block bounded by Montgomery, Chestnut, Sansome and Lombard Streets. Along the foot of Telegraph Hill, on the northwest corner of Block F (bounded by Lombard and Sansome Streets), aquatic vegetation is abundant around a ponded area and includes tules, willows, and grasses. No endangered or rare species have been observed on project area lands.

TABLE 2

Number of Days Selected Pollutants Exceeded State or Federal Standards, 1977[1]

Monitoring Site	Pollutant			
	Oxidant	Nitrogen Dioxide	Carbon Monoxide	Suspended Particulates
San Francisco (Ellis Street)	0	0	0	0
Redwood City	3	0	0	0
San Jose	13	0	32	10.5
San Rafael	2	0	0	0
Fremont	2	0	0	0
Livermore	17	0	0	1.7

Source: Bay Area Air Pollution Control District, Contaminant and Weather Summary, December 1977.

[1]The State standards are specific concentrations and durations of air pollutants that reflect the relationship between concentration and undesirable effects. They are target values, and no timetable exists for their attainment. The Federal primary standards represent levels of air quality necessary for protection of public health, with an adequate margin of safety. The provisions of the Clean Air Act as amended in 1970 require that by a specified date the Federal standards should not be exceeded more than once per year.

G. TRANSPORTATION

1. General Accessibility

Because the proposed Levi's Plaza project area is between Telegraph Hill and the Bay, accessibility is limited to a north-south corridor reaching from Broadway to Bay Street composed of The Embarcadero and Front, Battery, and Sansome Streets. Battery and Sansome are defined as major thoroughfares[1] carrying two traffic lanes each. The Embarcadero is a major thoroughfare with two lanes in each direction.

Limited east-west access is provided by Lombard, Union, Filbert, and Greenwich Streets, all of which are two-way. These streets terminate on the west at Telegraph Hill and provide local access only.

Transit access is provided by the San Francisco Municipal Railway (MUNI) and the Golden Gate Bridge, Highway, and Transit District. Figure 27, page 58, shows the general accessibility of the project site, indicating major street connections and transit routes.

2. Traffic

Both Sansome and Battery play the dual function of connecting the East Bay and the Peninsula to the northern waterfront area and connecting the Golden Gate Bridge corridor to the downtown business district. They also serve as access roads to a parking reservoir north of Broadway.

Table 3 shows existing traffic volumes and data sources. Sansome Street is a two-lane, one-way street northbound, with parking permitted on both sides. Commuters can enter

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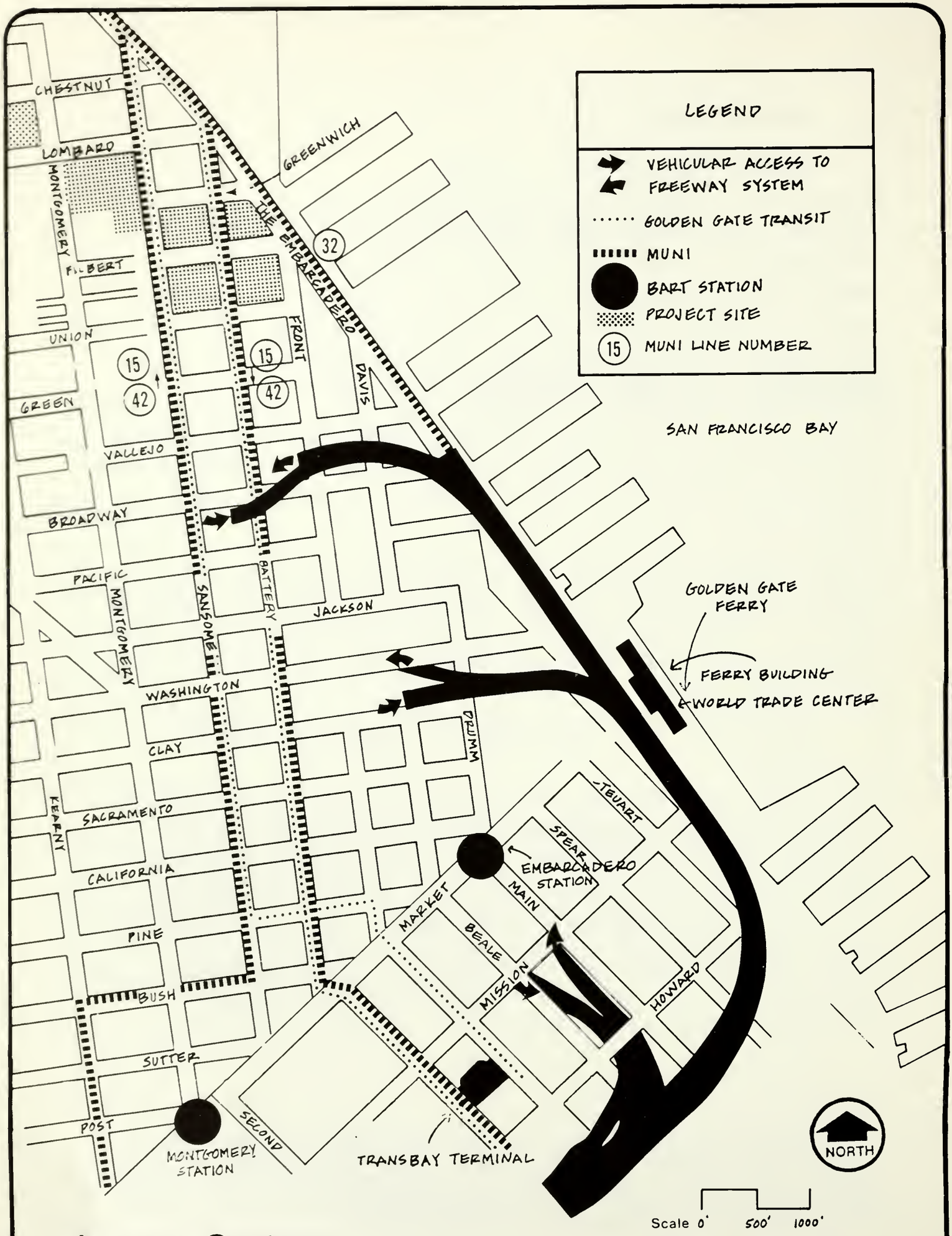
[1]Major Thoroughfare: A cross-town street whose primary function is to link districts within the City and to distribute traffic from and to the freeways; a route generally of citywide significance; as identified in Thoroughfare Plan of the Transportation Element of the Comprehensive Plan.



Access System

Figure No.27

Table 3

Existing Traffic Volumes - Proposed Levi's Plaza Project Area

Street	Width (meters)	Width (feet)	ADT[1]	Peak-hour, a.m. (8-9) volume	Peak-hour, a.m. (8-9) % of ADT[7]	Peak-hour, p.m. (4:45-5:45) volume	Peak-hour, p.m. (4:45-5:45) % of ADT[7]
Sansome Street	13.6	44.5	10,200	710[2]	7.0	700[2]	6.9
Battery Street	14	45.8	8,800	570[2,6]	6.5	750[2]	8.5
Union Street	9-12	30-40	700	55[3]	7.9	90[3]	13.0
Front Street	18	59.5	3,000[5]	240	8.0	300	10.0
Embarcadero	20±	66±	26,000[4]	1,620[4]	6.2	1,770[4]	6.8
Greenwich Street	14.6	48.0	1,500[5]	120	8.0	150	10.0
Filbert Street	13.4	44.0	1,400	110	8.0	140	10.0
Lombard Street	8.5-13.4	28-44	3,900[5]	250[5]	6.4	350[8]	9.0
Montgomery Street	9.1-11.0	30-36	3,800[5]	250[5]	6.6	340[8]	9.0

Source: John J. Forristal, Consulting Engineer, "Traffic Analysis, Greenwich Square Project, San Francisco, California," 1973, Table 1, adjusted by A. M. Voorhees for recent counts.

[1]ADT = average daily traffic adjusted by A. M. Voorhees on the basis of recent peak period counts.
[2]Counts between Union and Filbert Street, A. M. Voorhees, Fridays, 12 and 19 August 1977.
[3]Counts between Battery and Sansome Street, A. M. Voorhees, Fridays, 12 and 19 August 1977.
[4]Source: City of San Francisco traffic count, Tuesday, 8 April 1975.
[5]Estimate by A. M. Voorhees.
[6]From 7:45 to 8:45 a.m.
[7]Calculated by A. M. Voorhees.
[8]Counts, A. M. Voorhees, Tuesday, 15 August 1978.

the adjacent off-street parking lots directly from Sansome or via intersecting side streets such as Union, Filbert, Greenwich, and Lombard. Traffic volumes on Sansome reach an estimated total of 10,200 vehicles during a 24-hour period; an August 1977 traffic count in the morning peak hour (8 a.m. to 9 a.m.) at the intersection of Sansome and Union found 710 vehicles per hour. Traffic volumes during the afternoon peak hour (4:45 p.m. - 5:45 p.m.) measured 700 vehicles. Recent observations indicate that the peak-hour traffic levels of service[1] on Sansome Street north of Broadway are good (levels of service A or B) up to the intersections at Chestnut Street and The Embarcadero, where signals interrupt the free flow.

The morning peak-hour volume of 710 vehicles is 95% of the estimated 750 vehicles per hour capacity of Sansome Street at the Embarcadero intersection, representing a level of service C.

Battery Street is a two-lane, one-way street southbound with parking permitted on both sides. Traffic volumes on Battery reached an estimated total of 8,800 per day, and measured 750 vehicles in August 1977 in the afternoon peak hour (4:45 p.m. - 5:45 p.m.) at the intersection of Battery and Union. During the morning peak hour (7:45 a.m. - 8:45 a.m.) there were 570 vehicles. Traffic on Battery Street north of Broadway is free flowing until the afternoon peak hour, when freeway commuter traffic tends to back up behind the Broadway signal. The afternoon peak hour volume of 750 is 107% of the estimated 700 vehicles per hour capacity of Battery Street, representing a level of service D.

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[1]See Appendix D for definition of levels of service.

Comparison of traffic counts taken in 1977 and 1976 with the count volumes shown in the 1973 Traffic Analysis report by John J. Forristal indicates that traffic volumes have changed little since 1973. All peak-hour volumes on Sansome and Battery Streets have decreased by 3% to 12% except afternoon peak-hour traffic on Sansome, which has increased by about 15% in four years. Generally it can be concluded that traffic on Sansome and Battery Streets has been relatively stable in recent years; it appears that traffic on The Embarcadero has increased on a daily basis and has decreased during peak hours.

3. Parking

On-street parking is permitted on both sides of both Battery and Sansome for maximum two-hour periods. Violations of parking restrictions were observed, especially in driveways and red zones.[1]

Off-street parking within the project boundaries is provided by six pay lots at the following locations: (1) on Sansome (east side) between Union and Filbert (121 spaces); (2) at the southeast corner of Sansome and Greenwich (64 spaces); (3) at the southwest corner of Sansome and Lombard, across from Telegraph Landing (30 spaces); (4) at the triangle northwest of Battery and Filbert, bordering on the Belt Line tracks (208 spaces); (5) at the southwest corner of Battery and Filbert (60 spaces); (6) at the southwest corner of Front and Filbert (62 spaces). This last lot has been added after August 1977.

Additional parking is provided by 38 on-street spaces on Filbert between Sansome and Front, six spaces on Front between

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[1]Survey by Alan M. Voorhees, August 1977.

Union and the Embarcadero (additional on-street spaces on Front were unavailable at the time of the survey because of sewer construction) and about 23 spaces on Greenwich stub west of Sansome. Lots 1, 4, and 5 are public lots that charge $1.50 to $2.00 for all-day parking. Lots 2 and 6 offer monthly rates only. Lot 3 is reserved for Telegraph Landing visitors and residents. See Table 4 for parking space survey results. The peak parking demand (80 percent of total occupancy) occurs around 2 p.m.

4. Transit

Bus service to the project site is provided by both MUNI and Golden Gate Transit. MUNI currently serves the project area with two bus lines, one of them a combined line (see next paragraph). The 32 Route runs along The Embarcadero between the Southern Pacific Depot at Fourth and Townsend Streets and the Fisherman's Wharf area. These buses operate at 10 to 15-minute headways (intervals) during peak hours (between 7:30 a.m. - 8:30 a.m. and 4:30 p.m. - 5:30 p.m.) and at 15 to 20 minute headways during off-peak hours every day from about 6 a.m. to 6:30 p.m. The 32 Route operates with a peak load factor[1] of 1.2 from 5 p.m. to 5:30 p.m., but is under-utilized during off-peak hours,[2] according to the 1977 MUNI ridership count.

The 15 Third-Kearny (Navy Yard) Route runs between the Bayview District and The Embarcadero near Sansome and serves Sansome and Battery Streets, the Market Street area between First

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[1]Load factor: Number of passengers divided by number of seats provided.

[2]Average load factor of 0.1 between 2 p.m.-4 p.m.

Table 4

Parking Capacity and Usage[1]

Location	Capacity	9:45 a.m. cars	9:45 a.m. %	11:30 a.m. cars	11:30 a.m. %	2:10 p.m. cars	2:10 p.m. %	3:40 p.m. cars	3:40 p.m. %	Average Occupancy
Lot 1 (between Union & Filbert on Sansome)	121	73	60	90	74	102	84	93	77	74%
Lot 2 (at Sansome & Greenwich)	64	30	47	33	52	34	53	31	48	50%
Lot 3 (at Sansome & Lombard)	30	32	107[2]	32	107	33	110	29	97	105%
Lot 4 (triangle N.E. of Battery & Filbert)	208	193	93	142	68	207	99.5	184	88	87%
Lot 5 (Battery & Filbert)	60	37	62	41	68	52	87	54	90	77%
Lot 6 (Front & Filbert)[3]	62	38	61	42	68	54	87	56	90	77%
Filbert Street from Sansome to Front	38	35	92	31	82	34	89	27	71	83%
Front Street from Union to Embarcadero	6	12	200	13	217	13	217	11	183	204%
Greenwich Stub[4]	23	21	91	21	91	21	91	22	96	92%
Total Spaces	612	471	77%	445	73%	550	90%	507	83%	81%

Survey made by A. M. Voorhees, on Friday, 12 August 1977.

[1]Covers all parking spaces that are proposed to be eliminated.
[2]Occupancy exceeds 100 percent because of illegal or double parking.
[3]This lot has been added after the survey of 12 August 1977. Its occupancies have been estimated by A. M. Voorhees, based on a count of 8 August 1978 at 4:30 p.m.
[4]Surveyed on 15 August 1978.

and Third Streets, and the S.P. Depot. This route is combined with the 42 Sansome (Navy Yard) Route, which runs between the Navy Yard Terminal at Hunters Point and The Embarcadero near Sansome and serves the same areas. The 15 and 42 buses stop within two or three blocks of the Montgomery and Embarcadero BART stations. Headways along the Sansome and Battery section are about 15 minutes during peak hours and about 20 minutes during off-peak hours. Ridership counts undertaken by MUNI in 1976 indicate that the combined load factor on these routes near the Southern Pacific Depot was about 1.05 during the afternoon peak hour, which is below the 1.50 maximum load factor set by MUNI policy. The actual load factor would be lower in the project area, because it represents a less critical link than between the Southern Pacific Depot and Market Street in terms of ridership demand.

Golden Gate Transit serves San Francisco commuters living in Marin and Sonoma Counties. Golden Gate routes carry commuters from Sebastopol and Santa Rosa in the north, Inverness and Bolinas in western Marin County, and 27 other points connecting to the Golden Gate Bridge. Buses bound for the San Francisco Financial District run along Battery and Sansome Streets during weekdays only. There are 136 buses running on an average of about one-minute headways in the afternoon peak period (4 p.m. - 6 p.m.) along Sansome Street. Bus stops in the project area are located at Battery and Union and at Sansome and Union.

5. Other Transportation Modes

Other transportation modes, such as walking and bicycling, occur in the project area. Pedestrian activity is limited to short trips between parked vehicles and work or residential destinations. The Greenwich and Filbert Steps provide pedestrian connections between the project area and Telegraph Hill.

Both Sansome and Battery are designated bicycle routes and incorporate bicycle lanes.

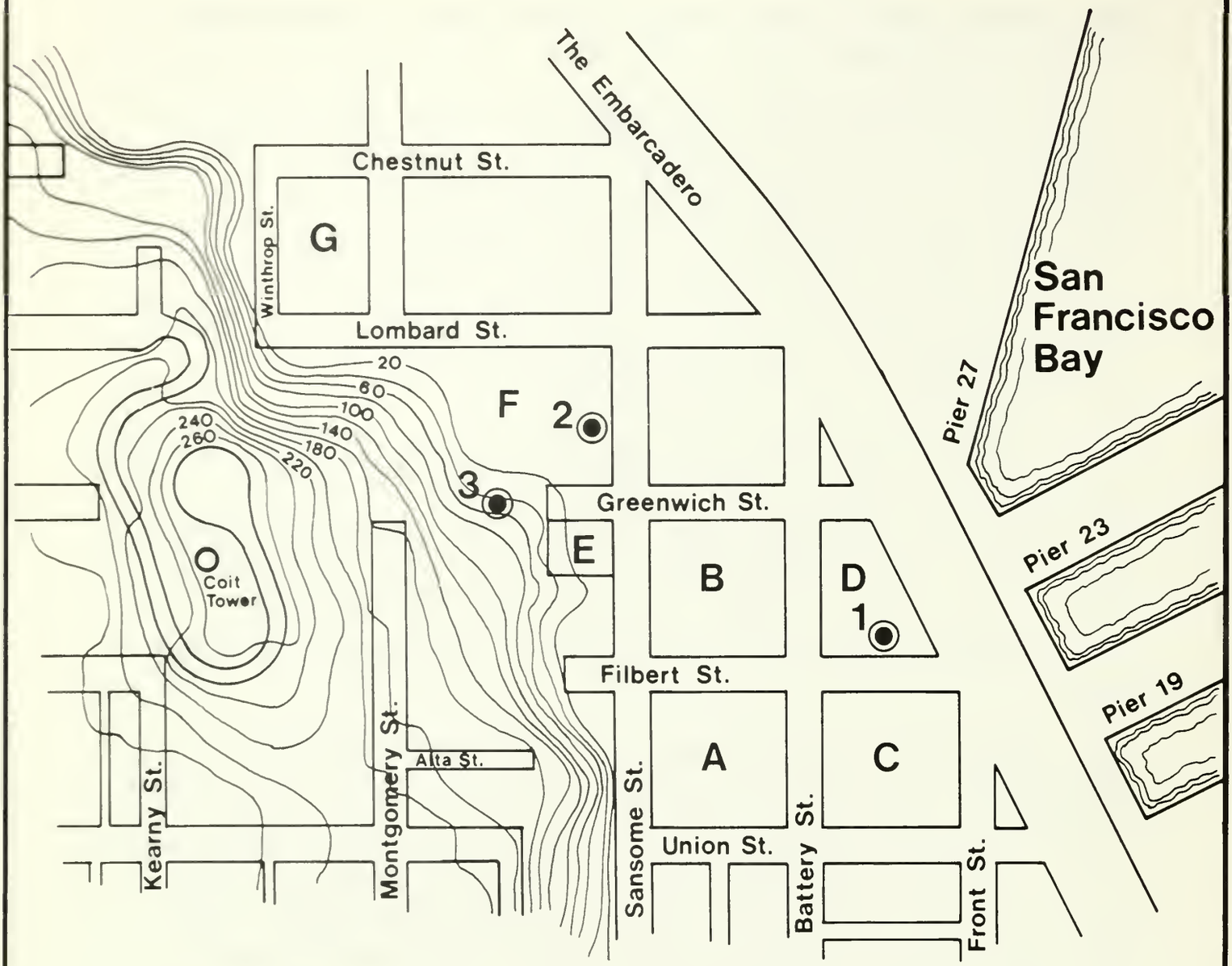
Railroad facilities were originally developed in the northern waterfront area to serve port activity, industries, and warehouses. Belt Line tracks along The Embarcadero serve the piers, and run along Jefferson Street through Aquatic Park, Fort Mason and the Marina Green to the Presidio and along North Point and Beach Streets. The importance of rail service has diminished as a result of changing land-use patterns and relocation of port activities.

The railroad tracks along The Embarcadero and Jefferson currently serve the U.S. Army at the Presidio and Piers 45 and 43. The tracks are publicly owned and are controlled by the Port Commission. San Francisco Port Railroads, Inc., has the right of use for the tracks and undertakes an average of six switching operations per day, mostly between 6 a.m. and noon.

The Plan for the Northeastern Waterfront shows that the Embarcadero rail corridor would be used by a light rail system. No definite program has been devised for the use of these tracks. This will depend on the future development of the waterfront and will be decided by the Port Commission. The federal government requires that one set of tracks remain along The Embarcadero and Jefferson.

H. NOISE

To quantify existing noise levels in the project area, a noise survey was conducted on Wednesday, 10 August, and Thursday, 11 August 1977. Three sites were chosen for study; their locations are shown on Figure 28, page 66. The details of the noise survey are given in Appendix A. The three sites were chosen as representative of the noise environment throughout the area: noise levels at Site 1 for the proposed Plaza



Noise Measurement Locations (◉)

NORTH

0 200 400 600

Scale Feet

Figure No. 28

and office building locations; Site 2 for the existing and proposed offices and apartments; and Site 3 for the nearby residential area on Telegraph Hill.

Each site was monitored for 15 minutes during each of three time periods, 7-9 a.m., 4-6 p.m., and 5-7 a.m. The results of the survey, including comments on the predominant noise sources during the measurement periods, are summarized in Table 5. The table shows that existing noise levels in the area are dominated by traffic (automobiles, trucks and buses). Secondary sources are occasional trains on the Belt Line railroad, aircraft overflights, and construction noise. Twenty-four-hour measurements were not made, but an approximation of the existing L_{dn}[1] at each site was made based upon the data obtained. The approximate L_{dn}'s at Sites 1, 2, and 3 respectively are 63 dBA, 64 dBA, and 58 dBA.[2] Table 6 page 69, lists typical sound levels measured in the environment that result from various noise sources.

I. LAND USE

1. Project Site Land Use

Block A: As shown on the existing Land Use Map, Figure 29, page 70, less than 40% of Block A is covered with buildings; the vacant land is currently used for parking (see Section III.G, Transportation for existing project area parking statistics). On the north side of the block, facing Filbert, is the six-story, masonry Gibraltar Warehouse, previously occupied by antique dealers. Directly behind this building and fronting

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[1]The L_{dn} is the descriptor established by the U.S. EPA to describe the average day-night noise level with a weighting applied to noise occurring during the nighttime hours (10 p.m.-7 a.m.) to account for the increased sensitivity of people during sleeping hours.

[2]The A-weighted sound level, expressed in dBA, is the sound pressure in decibels on the "A" scale. The "A" scale weights frequencies of sound to reflect the way people perceive sound.

TABLE 5

Measured Noise Levels in the Study Area

Site	Day and Time	L_1[1]	L_{10}	L_{33}	L_{50}	L_{90}	L_{eq}[2]	Noise Sources
1	Wed. 8/10/77 7:43-7:58 a.m.	70	67	64	62	57	64	1. Buses, trucks, and auto traffic on Battery & Embarc. 2. Aircraft
	Wed. 8/10/77 4:20-4:35 p.m.	70	64	61	60	57	62	1. Traffic on Embarc. 2. Aircraft
	Thur. 8/11/77 6:45-7:00 a.m.	73	66	62	60	55	63	1. Traffic on Embarc. & Battery 2. Train on Belt Line RR
2	Wed. 8/10/77 8:17-8:32 a.m.	73	68	63	61	55	65	1. Traffic on Sansome 2. Aircraft 3. Construction
	Wed. 8/10/77 5:11-5:26 p.m.	76	72	68	66	60	68	1. Rush-hour traffic on Sansome
	Thur. 8/11/77 6:00-6:15 a.m.	73	67	62	57	50	64	1. Traffic on Sansome
3	Wed. 8/10/77 8:42-8:57 a.m.	69	64	59	57	52	60	1. Traffic on Sansome 2. Aircraft 3. Construction
	Wed. 8/10/77 4:47-5:01 p.m.	69	65	61	59	55	61	1. Rush-hour traffic on Sansome 2. Helicopter
	Thur. 8/11/77 6:23-6:36 a.m.	65	60	56	53	46	56	1. Traffic on Sansome

[1]The sound level in dBA that was equaled or exceeded 1 percent of the time; L_{10}, L_{33}, L_{50}, and L_{90} are the levels equaled or exceeded 10, 33, 50, and 90 percent of the time, respectively.

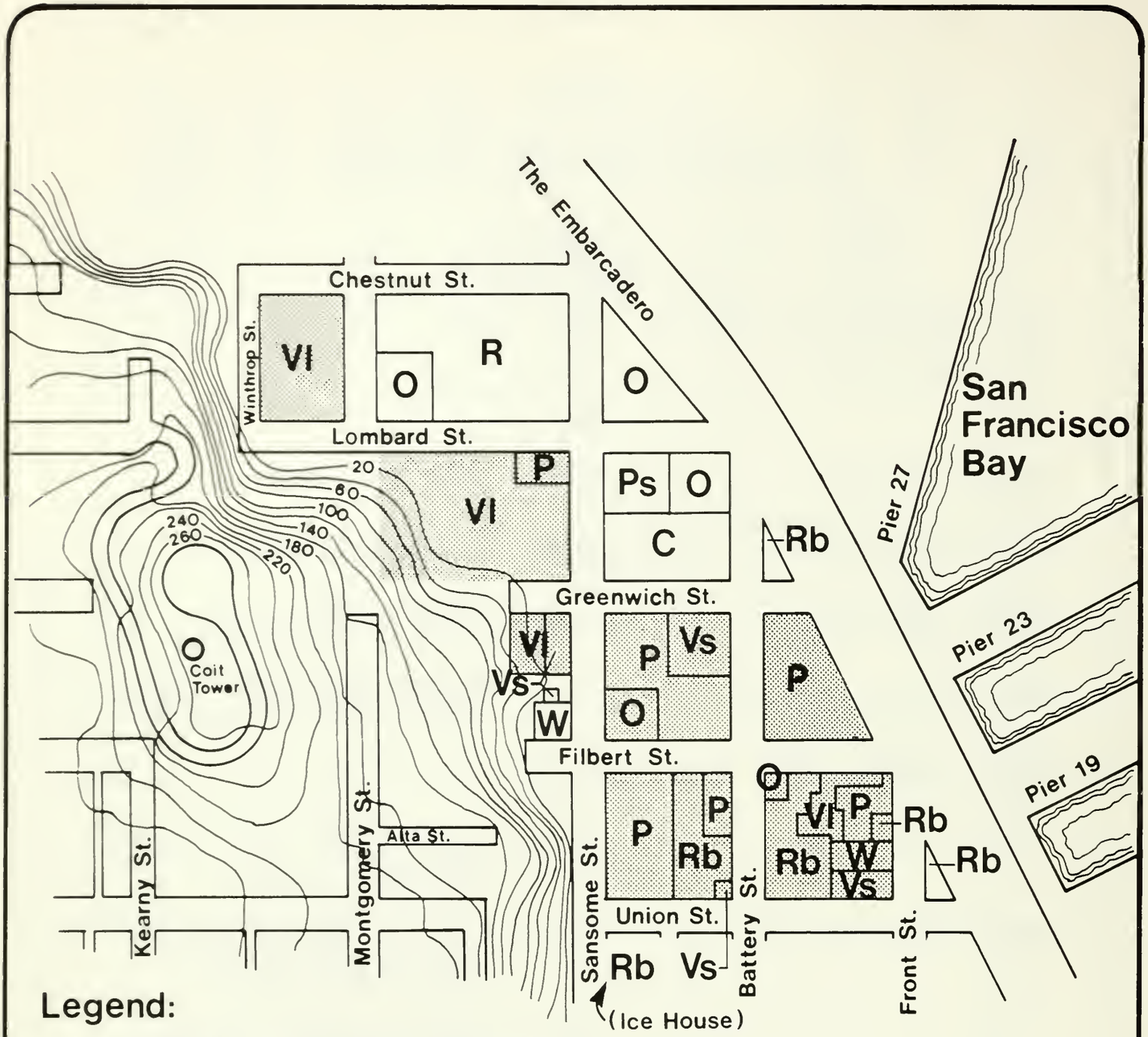
[2]L_{eq} is the equivalent steady-state sound level that, in a stated period of time, would contain the same acoustic energy as the time-varying sound level during the same time period.

TABLE 6

Typical Sound Levels Measured
in the Environment and in Industry

	Decibels, A-Weighted	
Civil defense siren (100')	140	
Jet takeoff (200')	130	
	120	
Riveting machine	110	Rock music band
Emergency engine-generator (6')		
DC-10 flyover (700')	100	Pile driver (50')
Textile weaving plant		Boiler room
Subway train (20')	90	Printing Press plant
Bus (50')		Garbage disposal in home (3')
Pneumatic drill (50')	80	Inside sport car, 50 mph
Freight train (100')		
Vacuum cleaner (10')	70	
Speech (3')	60	Auto traffic near freeway Large store Accounting office
Large transformer (200')	50	Private business office Light traffic (100') Average residence
	40	Minimum levels, residential areas in San Francisco at night
Soft whisper (5')	30	
Rustling leaves	20	Recording studio
	10	

Note: The distance in feet between source and listener is shown in parentheses.



Legend:

VI	Vacant Land	Rb	Retail/Business Service
Vs	Vacant Structure	W	Warehouse
P	Parking (surface)	R	Residential
Ps	Parking Structure	C	Private Sports Club
O	Office		Project Land Parcel

Land Use, 1977

NORTH

0 200 400 600

Scale Feet

Figure No.29

on both Battery and Union Streets is the one-story Battery Street Furniture Faire, a former retail furniture warehouse. On the corner of Battery and Union, abutted on two sides by the Furniture Faire, is the brick Cargo West Building. This two-story structure is currently vacant; it was most recently used for a restaurant.

Block B: Bounded by Greenwich Street on the north, Block B contains the vacant Italian Swiss Colony Building at the corner of Battery and Greenwich and a vacant two-story office building at 1300 Sansome Street (corner of Filbert and Sansome Streets). Together they cover about 45 percent of the block; the rest is used for parking.

Block C: Some 80 percent of this block is occupied by buildings; the balance is used for parking or for loading areas. On Union and Front Streets is the vacant, 2-1/2 story, concrete, Abbott Laboratories (Sperry Flour) building, capped by a tower. Two masonry warehouses used for the sale of antiques occupy the southwest quarter of the block. Adjacent on Battery is the Vorpal Gallery, a brick structure that surrounds an office building on the corner of Filbert. The remaining two buildings are the two-story Adcraft Sign Company and the one-story Danish Furniture Imports building on Front. The former used for offices and a printing plant and the latter as a warehouse. Block C is the only block in the proposed project where individuals are currently employed. Three businesses employ 15 persons.

Block D and Block E: Block D is vacant and is used for parking. Block E has been cleared and is vacant.

Block F and Block G: Both of these blocks have been cleared. Block F, at the corner of Sansome and Lombard, is utilized for the daily parking of about 30 cars. Block G is surrounded by a chain-link fence.

2. Project Area Land Use

The project site is part of a larger area characteristically referred to as the Base of Telegraph Hill. The area extends along the waterfront from Broadway on the south to Bay Street on the north.

The Golden Gateway Redevelopment Project area and the Jackson Square Historic district lie to the south. In the Base of the Telegraph Hill area, south of Union Street, there are few vacant parcels. The buildings are used mainly for offices or warehousing; a few are devoted to retail sales and light industry. Building heights range from one to six stories. Generally, the higher buildings are situated inland near Sansome Street and the lower buildings near the waterfront. Some of the older warehouses have been remodeled for use by architects, antique dealers, and as furniture showrooms, including the Ice House at Sansome and Union Streets, directly south of Block A.

In the southern part of the Base of the Telegraph Hill area, only one major building, Master Charge, has been built in recent years. It occupies an entire block at Front and Vallejo Streets. Most other buildings in the area occupy one-half block or less.

North of Union Street, vacant buildings, cleared land, and parking lots predominate. New construction has been limited to the Telegraph Landing condominium, the only residential development in the area, in the block bounded by Montgomery, Chestnut, Sansome and Lombard Streets. Directly west of the project site are the cliffs of Telegraph Hill. Residences border the Filbert and Greenwich steps and continue to the top of the hill. To the east of the project, at the corner of Lombard and Battery Streets, is the Merchants Ice House, newly renovated for office use. A separate garage, recently constructed west of the building, provides parking for about 200 cars.

A two-story concrete warehouse on the half block south of the Merchants Ice House has been converted to a private sports club. North of the Telegraph Landing block are the recently renovated buildings of the Fibreboard Corporation, Western Contract Furnishers, and Victoria Station restaurant chain offices, and the newly built Francisco Bay office complex on Port land, fronting The Embarcadero. A restaurant is located on the triangular parcel opposite the foot of Pier 27 and a tire dealership is located on the triangular parcel opposite the foot of Pier 19. To the east are The Embarcadero and Belt Line Railroad, which provides limited freight service to the piers.

Pier 35, to the north of the project site at the foot of Bay Street, is a passenger terminal that has received continued use. Pier 27 is the newest on the northern waterfront, and Piers 31 and 33 (see Figure 2, page 11) are in use as backup to Pier 27 for bulk cargo operations. Piers 9 through 23 continue in general maritime cargo use.

3. Proposed Area Land Use

Two major projects are proposed near the Levi's Plaza project site. One is the final phase of the Golden Gateway Redevelopment Project. The three blocks to be developed are bounded by Broadway, Pacific, Front, and The Embarcadero. The plans call for the construction of buildings containing office space on the lower levels and townhouses above.

The second project is the North Point Pier, a tourist marina complex on Piers 37, 39, and 41, approximately three blocks east of Fisherman's Wharf. Major elements of the plan include a park to be built along the shoreline, restaurants, retail shops, fishing areas, marinas for small pleasure craft and sportfishing boats, and a parking garage for 1,000 cars.

In addition, the City of San Francisco has proposed a parkway (originally called the Maritime Parkway) on The Embarcadero between Broadway and North Point Street. The proposed Embarcadero Improvement Plan calls for wider sidewalks, lanes for truck

parking with improved access to the piers, traffic lanes, an exclusive right of way for transit, a bicycle lane, and a landscaped parkway strip in front of all development on the inland side of the street. In all, about 18,900 square feet (40%) of Block D and 4,900 square feet (6.5%) of Block C would lie within The Embarcadero right of way. Improvement plans for The Embarcadero also call for street closures to reduce interference with through traffic and pedestrian movements along The Embarcadero. These proposals include the closure of Greenwich Street at its intersection with The Embarcadero, and Front Street from Union Street to The Embarcadero.

J. VISUAL QUALITY

The proposed project site has been used primarily for warehouses since the late 1800s. As Port activities have declined in recent years, old warehouse buildings have been converted to office, restaurant, and retail uses. Some buildings in poor structural condition have been demolished and the land converted to parking lots.

Existing building construction materials consist mostly of red brick; smaller buildings have wooden or concrete surfaces. Doorways and windows are typically formed in semicircular or elliptical arches with the windows set back from exterior building surfaces. Examples include the Italian Swiss Colony Building and the Ice House, located at the intersection of Sansome and Union Streets. Building forms characteristically assume rectangular shapes; ornamentation is not apparent. The six-story Gibraltar Warehouse, on Filbert between Sansome and Battery, is the dominant building on the project site.

Streets once paved with granite cobbles have been resurfaced with asphalt paving. Railroad spurs penetrate west into the project site from the Belt Line tracks paralleling the Embarcadero. Telephone and electric lines supported on wooden poles follow the grid pattern of the streets.

The vacant land bordered by Chestnut and Montgomery Streets (Block G) is surrounded by chain-link fencing.

Principal views from the project site to surrounding areas include, most notably, Telegraph Hill, which, because of its proximity, mass, and height of 275 feet, tends to orient sightlines north to south along the Hill's base and east toward the waterfront. From the Battery-Filbert intersection, Coit Tower is prominent, and from many locations pier structures adjoining The Embarcadero are visible. The Bay and the Bay Bridge are principal objects in the field of view from points on Telegraph Hill above the project site. The buildings and parking areas of the site are also visible from residential areas on the Hill and from the Filbert and Greenwich Street stairways.

Off the site, buildings that stand out because of their size are the Ice House at the Sansome-Union Street intersection and the Telegraph Landing residential complex at the Sansome-Lombard Street intersection.

K. HISTORICAL AND ARCHAEOLOGICAL RESOURCES

1. The Northern Waterfront - A Brief History

In its natural state Telegraph Hill was a windswept promontory overlooking a cove to the south. Yerba Buena Cove offered the most protected anchorage on the northernmost part of the San Francisco Peninsula and for this reason was the site

for a commerce-oriented town which was established in 1835 under Mexican authority. The town site and cove, south of Telegraph Hill, offered adequate space for all development until the full impact of the California Gold Rush was felt, late in 1849.

The name Telegraph Hill finds its origin in the Gold Rush; in 1849 a semaphore (or "telegraph") was erected on top of the hill to signal to the citizens of the City the arrival of ships through the Golden Gate. During the 1850s, Telegraph Hill first was covered with tents and then with shanties of squatters and early residents. Plate 2 in Appendix B[1] gives some idea of the level of development in 1851.

The pressing need for wharf facilities to serve the growing shipping of 1849-1852 resulted in the extension of long wharves into the shallow waters of Yerba Buena Cove. The same need suggested the desirability and economy of wharves built out from or along the steep slopes of Telegraph Hill, where deep water came close into the bank. Thus, the wharves and warehouses of the project area were not first on the San Francisco water-front, although they were constructed early (1851 and immediately after). By the end of 1851, the Levi's Plaza area contained Griffing's Wharf and Warehouse (Blocks A and B) and a small wharf next to one of San Francisco's first prefabricated iron warehouses, imported from England in about 1850 (Block F).

In the early and mid-1850s the wharf and warehouse complex in the area developed rapidly. The base of the Hill was cut away and the foreshore filled for construction of sub-stantial masonry warehouses and wharves to accommodate the big clipper ships launched for the lucrative California trade (see Figure 30, page 77 and Figure 31, page 78). Plate 3, Appendix B, shows part of the Levi's Plaza area, with its Gold Rush "warehouse row" (Block F, Block B, and Block E, as well as adjoining areas). The year is 1857, the view

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[1]Olmsted and Pastron, Levi's Plaza, Report on Historic and Archaeologic Resources; prepared for Environmental Impact Planning Corporation, 23 June 1978.

North Point, 1877

Figure No.30

Cowell's Wharf, 1868
(Block C)

Figure No.31

is looking north on Sansome Street from Filbert Street, and the ships at the docks include the celebrated four-master, Great Republic, the largest clipper ship ever built.

All the brick warehouses seen in this view survived the 1906 fire. The last of them was torn down in 1969; the wall of the first - the Pioneer Warehouse, at the lower right hand corner of the Gifford Lithograph (Plate 3, Appendix B) - still stands on Block A of Levi's Plaza. The construction between 1878 and 1881 of the seawall, which forms the present-day bulkhead line and The Embarcadero, added more land to be filled, and quarrying operations from 1851 up to the First World War expanded the level area to the west. The new land was occupied by more warehouses and industrial structures, with a scattering of waterfront-type service enterprises--saloons, lodgings, ship chandleries, and smithies.

The summit of Telegraph Hill afforded inexpensive building sites for early residents who were attracted both to the view of San Francisco's harbor and the informal bohemian lifestyle in the Calhoun Terrace, Alta Street, Pringle Court, and the "little streets" (40 in all) off steep wooden steps that led to the waterfront scene below. The garden steps became a way of life too attractive to be afforded by the artists and writers of the 1920s and 1930s as San Francisco residents grew to appreciate the view, and Telegraph Hill became a fashionable address (with rents to match), and an enclave of determined conservationists organized to protect the ambience that they enjoyed.

2. Historic District Designation

The area of the northern waterfront containing the project site was an obvious candidate for designation as a historic district, because of the Gold Rush warehouses preserved from the 1906

fire and because a waterfront industrial building from every decade (except the 1870s), created an architecturally historic network within the district. Further, many buildings of the post-Gold Rush era were constructed so that they contributed to and enhanced the old waterfront ambience. With the destruction of the North Point (Seawall Warehouse) in 1969, it was felt that some action was needed to preserve what was left of San Francisco's earliest waterfront structures.

On 3 March 1976, the Landmarks Preservation Advisory Board[1] adopted a resolution of intent to designate the area bounded by Broadway, Lombard, The Embarcadero, and the base of Telegraph Hill, including the Project site, as a historic district. However, no further formal action has been taken.

If the area were to become a historic district, the Landmarks Board would act on permit applications for demolition, new construction, additions, alterations, or exterior changes visible from a public place or thoroughfare on the property within that historic district. To date, the Jackson Square Historic district (an enclave of buildings that escaped the 1906 disaster), is the only one that has been established in San Francisco by the Board of Supervisors. Resolutions of intent to designate have been noted for the Webster Street Historic District, the Civic Center Historic District, and the portion of the northern waterfront previously described.

3. Buildings with Historical and Architectural Significance

Two buildings within the project area have been noted by the Landmarks Board for their architectural or historic significance. They are the Italian Swiss Colony Building (on

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[1]Established by the City Planning Commission and the Board of Supervisors to act in an advisory capacity to preserve historic, architectural, archaeological, and aesthetic landmarks.

the corner of Greenwich and Battery Streets, in Block B) and the Cargo West Building (on the corner of Union and Battery Streets in Block A).

The San Francisco wine vaults for the Italian Swiss Colony in Asti were built from the profits of its cooperative vineyards in Sonoma County. Built in 1903, before prohibition, this example of turn-of-the-century industrial architecture survived the 1906 fire and was doubled in size by an identical building to the rear.[1] The ground-level arched doors, with their iron shutters, were for receiving wine directly from railroad cars. The details of the columns on the second story and the ornamental balustrade on the roof made the building an example of this period's warehouse architecture.

The Levi's Plaza Project calls for the restoration and use of the Italian Swiss Colony building as it stood in 1903, seen in Appendix B as Plate 20; a more detailed history accompanies the Plate.

The Cargo West Building, also to be preserved in the Levi's Plaza Project (on Block A), was built as the office for the Independent Wood Company, a year after the earthquake and fire, on part of the site of the Union Warehouse from the Gold Rush era. As can be seen in Plate 14, Appendix B, Cargo West is a two-story brick building. While neither as elaborate nor as finished in exterior details, it is in keeping with the larger Gold Rush structure it replaced. After the post-earthquake building boom passed, the Cargo West Building was operated as a neighborhood restaurant and bar with "lodgings above" by a succession of Italian owners. Interior remodeling of the Cargo West Building has reflected the needs and tastes of a succession of restaurant owners.

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[1]Plates 17 and 18 in Appendix B show the three-story wine storage building in 1924 with its twin building on Sansome.

Also on Block A of the Levi's Plaza project is the last remaining wall of the Pioneer Warehouse, built from the rubble of Telegraph Hill by Frederick Griffing in 1851 on fill that was also carved out of the hill. (As early as November 1851 Griffing had constructed a wharf capable of taking advantage of "the largest class of vessels" along what would be the line of Battery Street, north towards Greenwich.[1]) It was the south wall of the Pioneer Warehouse that marked the end-border of the 1906 fire, saving the waterfront district that lay between the Pioneer and North Point. The warehouse itself survived and was used continuously for waterfront storage until it was demolished in 1954, leaving only the south wall standing as part of the north face of a much later built concrete storage building occupied by the Battery Street Furniture Faire.

Across the street from the Cargo West Building and the wall of the Pioneer Warehouse is the Vorpal Galleries Building (Block C) which occupies the corner of Filbert and Battery. The present two-story brick building stands on the site of Dock Drive that led to Cowell's Wharf during the Gold Rush and in the 1860s. Plate 19, Appendix B, taken in 1867, shows Block C when Cowell's Warehouse was at the foot of Union and the wharf (called Shaw's Wharf on the Coast Survey Map of 1859, Map 3, Appendix B, page 18), and was the site for ship repair and discharging cargo from large steamers such as the Ajax.

Plate 15, Appendix B, shows the Vorpal Galleries site six months after the 1906 fire when the present structure had been built. At that time the block was still owned by the Cowell family and the two-story brick building was used by the Cowell family as a stable through the 1920s. The corner plot was filled with a waterfront saloon of the same sort that had persisted on that corner site from the 1870s.

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[1]See Appendix B for a discussion of this historic wharf and warehouse in Eldredge v. Cowell, 1852, under "Gold Rush Hulks and Storeships" and "Gold Rush Wharves and Warehouses."

The Vorpal Galleries building was successively used by a variety of operations that included the Humboldt Malt Brewery, the ice house of the Solid Gas Corporation, the Caldri Ice Corporation, and the headquarters of the Marine Shop Labor Union #886, together with the Sopac Ship Maintenance and and the Plant Brothers Contractors. Like the Cargo West Building, the Vorpal Galleries is a two-story brick structure whose scale and brick facade are in keeping with the general ambience of what is left of San Francisco's Gold Rush warehouse district. Unlike the Cargo West Building, the Vorpal Galleries has not been designated an historic landmark.

The Sperry-Abbott Building is in the opposite corner of Block C, at the corner of Front and Main Streets. It was designed in 1915 by George Wagner for the Sperry Flour Company on the site that was orginally Law's Wharf. The Sperry Flour Company dated back to 1852, when Austin Sperry built his first flour mill in Stockton. The company that built the building was bought by General Mills in 1920. From 1946 to 1967 Abbott Pharmaceutical Laboratories occupied the building; hence the name Abbott on the tower. The building was unusual for its time in that the architect used exposed concrete as a straightforward exterior finish material rather than treating it to resemble something else.[1]

4. Archaeological Resources

The characteristics of the natural site and its modification, on the eastern (Bay) side during the 1850s and the western (Telegraph Hill) side from the 1850s through the first decade of the 20th century, divide the Levi's Plaza area into three general zones from the standpoint of potential archaeological resources. The natural shoreline is shown on Figure 32, page 85, together with the 20-foot and 40-foot contours of

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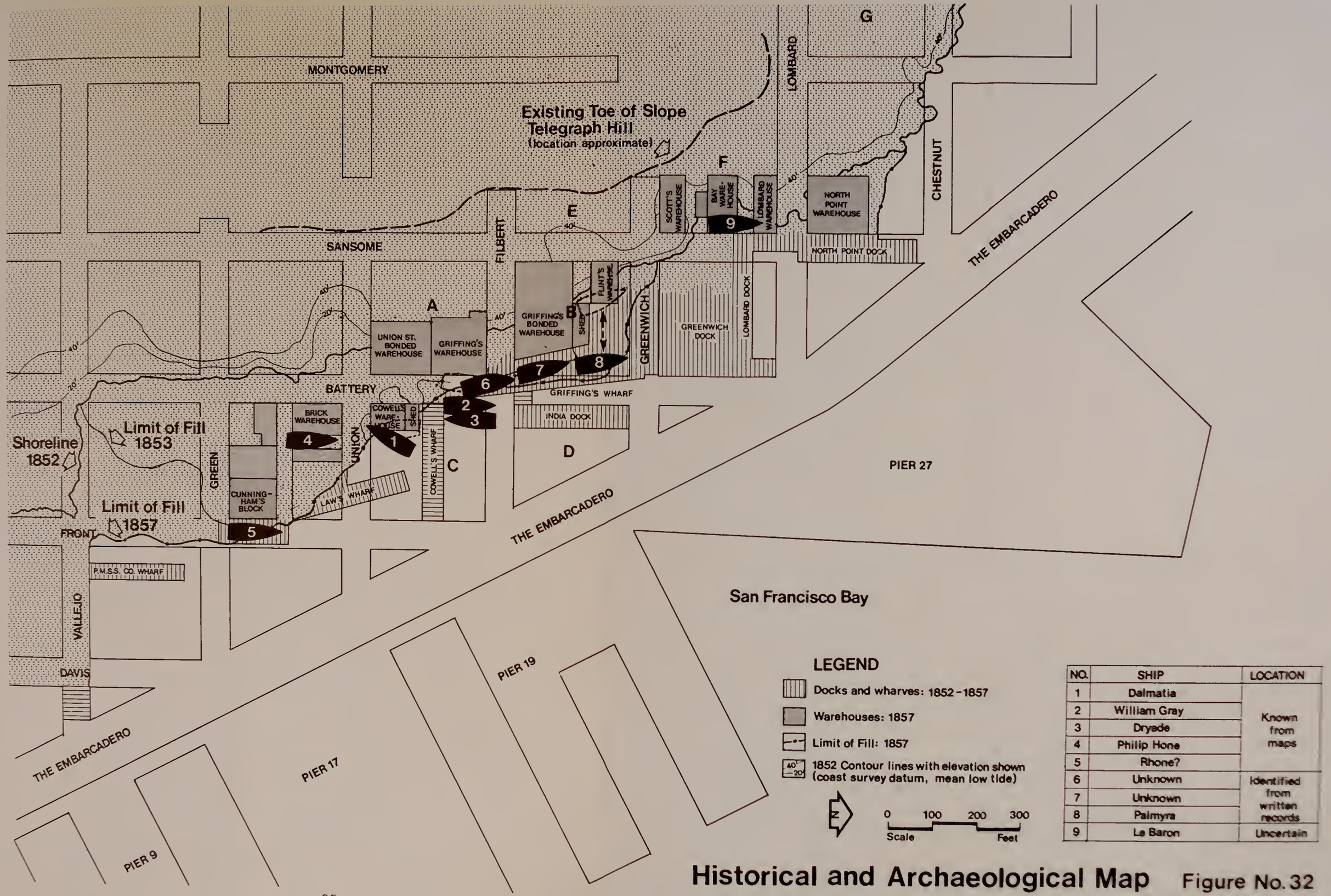
[1]Appendix B has further notes on the remaining buildings in the project area as they stand today, together with additional information on the buildings of more historic interest above.

the 294-foot hill, as shown by the U.S. Coast Survey in February 1852, when only slight and very local modification of the slope had taken place.

The dashed line on Figure 32, page 85, shows the approximate base of the steep slope or cliff left by quarrying operations, and represents a line of 20 feet or lower in comparison with the datum plane (mean low tide) of the original contours. Thus, a large part of the project area comprises a zone in which prehistoric, Spanish-Mexican, early American, Gold Rush period, and even later cultural remains at the surface or immediate subsurface level, would have been removed by quarrying and grading.

A second zone of historical archaelogical potential comprises the Gold Rush (1851-1857) fill and wharf area. Fill in the project area appears to have come directly from Telegraph Hill initially (1851-1852), but may have been supplemented from other areas as early as 1853-1854. Figure 32, page 85, shows storeships located in the area at specific times during the early 1850s. The remains of one or more of these ships probably still exist, as will be described. It can be presumed that scattered cultural materials, the result of loss or discard, exist in the fill or in the area occupied by wharves and shipping prior to the completion of the present seawall in this area in 1881. Specific deposits of substantial quantities of cultural materials could appear in association with fill (and the filling of planked-over areas). These would be in the form of refuse, either dumped periodically for some years in specific locations, e.g., under or alongside the frame buildings of the 1860s and 1870s constructed on pilings along Battery Street between Cowell's Wharf and Filbert Street, or dumped in the course of a specific filling operation.

There is no specifically identified site in the Levi's Plaza project area that was historically used for dumping.



LEGEND

- Docks and wharves: 1852 - 1857
- Warehouses: 1857
- Limit of Fill: 1857
- 1852 Contour lines with elevation shown (coast survey datum, mean low tide)

N

0 100 200 300
Scale Feet

NO.	SHIP	LOCATION
1	Dalmatia	Known from maps
2	William Gray	
3	Dryade	
4	Philip Hone	
5	Rhone?	
6	Unknown	Identified from written records
7	Unknown	
8	Palmyra	
9	Le Baron	Uncertain

Historical and Archaeological Map

Figure No. 32

The third zone comprises the area used by shipping from the late 1850s to the 1878-1881 construction of the seawall segments fronting the project area. Sunken ships or other obstructions to the use of the wharves would have been removed. Even as conspicuous a structure as Law's Wharf of 1852-1853 appears partially removed (to clear Cowell's Wharf and Warehouse) by 1857 and is entirely absent on the 1869 Coast Survey Chart. Because of the complexity of the wharf development of this area (on Blocks C and D) during 1868-1878, scattered cultural remains associated with a variety of maritime uses - from ship repair to the Italian lateen-rigged fishing fleet - might be expected on or just below the surface of the Bay mud line. However, excavation of similar areas in 1977-1978 during construction of the North Shore and Channel Outfalls Consolidation Projects[1] has shown a "light" distribution of artifacts, except where dumping associated with deliberate filling occurred. Large parts of this zone in Blocks C and D were not filled until after completion, in 1881, of the seawall along the outer edge of the present Embarcadero.

a. Prehistoric, Spanish-Mexican, Early American Periods (to 1849)

The original foreshore in the project area (crossing Blocks A, B, and F) was for the most part very steep and unsuitable for any type of abode. There are no recorded prehistoric sites in the neighborhood of the area. The native inhabitants, skilled in the construction and navigation of tule canoes, may have visited parts of the shore: Therefore, individual artifacts may exist in a narrow zone along either side of the original shoreline. Findings of Spanish-Mexican or Early American cultural remains are subject to the same limitations.

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[1]Public works sewerage projects to reduce the occurrence of wet-weather overflows into the Bay along the north and northeast shores of San Francisco, see EIRs EE 75.122 and 75.155.

No structures existed on the site before 1849, and it was not until 1854 that the first roadway was built around the foot of the hill to North Beach.

b. Gold Rush Hulks (1850-1857)

From the historical archaeological standpoint, the identified presence of a number of Gold Rush storeships and hulks, one or more of which are probably still in existence in the projected area, represents a focus of interest. A detailed analysis of the storeships in this area, including identification and probable disposition, is found in Appendix B. It has been possible to identify by name or location storeships and hulks used in connection with wharves and warehouses during the Gold Rush period. Figure 32, page 85, shows approximate locations. Alta California of July 31, 1852, lists the names and "neighborhood" locations of no less than 164 storeships; the number of these listed as moored in the vicinity of the project area could suggest additions to the fleet. But, as the discussion in the Appendix shows, even some of those shown on the map (Figure 32, page 85) appear to have been moved out.

To the extent that they could be identified, the ships shown in Figure 32, page 85, were all storeships at one time - seagoing ships, barks, or brigs - that had arrived at the height of the Gold Rush, were laid up because of the prohibitive cost of shipping crews, and were large enough and sound enough to be used for safe and dry storage of goods. Tonnages are known for some of them: the Palmyra was probably the smallest, a brig of 145 tons; the William Gray more typical, a ship of 295 tons. The William Gray appears to have been drawn to measurement on an 1852 map (Map 1A in the Appendix) and was about 115 feet long, with a beam of about 33 feet.

By the time a storeship had been engulfed by wharves and fill, it would have been a hulk stripped of anything moveable or valuable. If the ship had been drawn as far as possible

inshore on the highest tides, the bulwarks and perhaps deck and a portion of the topsides would have projected above city grade and would have been cut down. In ships of the period, oak frames, stem, sternpost, keel, and other timbers would be expected, and oak planking and ceiling were common, although there was a growing scarcity of oak and a recognition of the superiority of some species of pine for planking. The hull would commonly be coppered.

Details concerning the vessels numbered on the map (Figure 32) are in Appendix B, with a discussion on the reliability of their identification, location, and other pertinent information. Below is a summary of storeships or hulks identified as being on or near the project site in the Gold Rush period. Comments are given on reliability of the source of identification and location and the probability of substantial remains at the approximate locations noted.

1. The Dalmatia is reliably located and identified as of 1852, and less reliably reported to have been sent back to sea. This vessel, or some other, is possibly located in a slightly different position alongside Cowell's Warehouse and partially under it. (Photographs from the 1860s show that she did not remain in the mapped position.)

2. The William Gray is reliably located; it is less reliably reported that the ship was removed for breaking up. If still in existence, it does not lie in the exact early 1852 location. It may have become one of the ships (6, 7, or 8) used in extending Griffing's Wharf.

3. The Dryade is reliably located for the year 1852, but its removal for other use has been positively documented.

4. and 5. The Philip Hone(4) is reliably reported buried in the approximate location shown. The Rhone or another vessel (5) is reliably indicated at this position, but could have been removed. Both vessels are not on the project site.

6. A vessel has been reliably established as forming part of the foundation for Griffing's Wharf (1852). It could be the William Gray (discussed above) or Palmyra, or another vessel, not identified. It is quite probable that vessel #6 exists and is buried. Its east-west location is quite specific; its north-south location varies by about 50 to 60 feet.

7. and 8. Griffing's intention to extend his wharf by use of two or more ships was reliably reported. The wharf was extended, but it is not certain that hulks were used. The Palmyra was fairly reliably reported near this location, and it may have been a hulk used by Griffing. The Palmyra could be in an alternate location, or may not be in existence.

9. The LeBaron was fairly reliably reported "sunk near North Point Dock." It also might be at an alternate location nearby or may have been subsequently removed.

c. Other Cultural Materials of the Gold Rush Period

Figure 31 shows wharf structures on Blocks B, C, and D in 1857. In addition, there was a small wharf (seen on the 1852 and 1853 Coast Survey charts) extending from the shoreline approximately to the centerline of Sansome Street along the line of the north wall of the small iron warehouse, which is south of the Bay Warehouse site. The portion of Law's Wharf on Block C was removed prior to 1857. Remains of the other wharves, together with wharves constructed in the 1860s and 1870s (see Plate 6 of Appendix B for a view of circa 1877), may exist in and under fill placed after completion of the Embarcadero seawall in 1881.

The foundations and floors of the Union, Pioneer's (Griffing's), Griffing's Bonded, Flint's, Scott's, Bay, and Lombard warehouses all appear to have been below present grade, and for the most part, probably are extant a few feet below the present

surface. Scott's Warehouse (as noted on the 1886 Sanborn Map in Appendix B) appears to have had a basalt-block flooring - unusual if part of the original construction. The Bay and Scott's are noted on the same map as having basalt sidewalk platforms. If these are the same stoops shown on Plate 3 (Appendix B) from 1857, the date and material are of interest and they may exist wholly or partly one or two feet below the present grade.

d. Cultural Materials of the 1860s and 1870s

The introductory comments to this section, particularly the zones in which types of cultural materials may be extant, are referred to.

No specific sites have been identified that might contain materials adding to our knowledge of the cultural period, nor have any specific subsurface remains of the period been identified as valuable, museum-type relics.

e. From the Seawall to the Earthquake and Fire (1881-1906)

During this period, filling of areas on the eastern side of Levi's Plaza and continuation of cutting down to grade a portion of the western side were the notable events regarding archaeological resources. Cutting continued to remove any earlier cultural materials. Filling may have introduced quantities of contemporary refuse - household garbage and industrial waste from blacksmithing and from the large sugar refinery on the south side of Union Street - along with sterile fill. Specific refuse-dumping operations have not been identified, but experience with the excavation of areas filled under similar conditions (North Shore and Channel Outfalls Consolidation Projects) has shown the occurrence of such sites where substantial dumping took place over a short time.

f. Earthquake and Fire to Present (1906-)

The effect of the 1906 destruction upon archaeological resources of the project area would be confined primarily to the filling with debris of some previous below-grade building floors. The 1906 fire burned only the south half of Block A and all of Block C. The Union Warehouse appears to have had a floor below grade, and materials from the 1852 building and debris from Block C or Blocks south of Union may be found below present grade to a depth of three feet or more. In subsequent decades, all the pre-1906 structures that occupied the project area have been demolished, with the exception of the Italian Swiss Colony and the wall of the Pioneer Warehouse. Again, cultural materials may have been introduced into below-grade plots if slabs or parking lots were subsequently constructed, but there is no evidence that these materials will add to our knowledge of cultural history.

L. POPULATION AND EMPLOYMENT

Fifteen people are employed in the existing structures on Block C.[1] There is no employment on other Blocks of the project. Telegraph Landing, the residential development previously noted to the north of the project site, has 360 occupants.[2]

It is estimated that about 11,300 people were employed in the northern waterfront area in 1975. Between 1970 and 1975 certain activities had declined, but jobs in finance, insurance,

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[1]Memorandum, Don Wyler, B.J.W. Associates, San Francisco, 28 September 1977.

[2]Robert Kilbride, Manager, Telegraph Landing, telephone conversation, 30 August 1977.

real estate, business services, and professional services had increased. It is estimated that half the total employment in the area is in office activities and retail trade. Manufacturing and trade, communications, and utilities account for about 35% of the total employment in the area.[1]

M. COMMUNITY SERVICES

1. Wastewater[2]

The San Francisco Wastewater Management Program is responsible for sewage treatment in the City of San Francisco. Three primary treatment plants[3] are currently in operation: the North Point plant, the Southeast plant, and the Richmond-Sunset plant.

The North Point plant, located at Bay and Kearny Streets, processes wastewater from the area of the proposed development. Treated wastewater discharges through outfalls located beneath Piers 33 and 35. The plant treats about 60 percent of the City's dry-weather wastewater (plans are to convert it to a wet-weather facility and to transfer dry-weather wastewater loads to the Southeast Water Pollution Control Plant.

The North Shore Outfalls Consolidation Plan has been adopted by the City to reduce wet-weather overflows from bypass outfalls on the northern waterfront. Rain water runoff will be stored temporarily until it can be treated. The Embarcadero

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[1]Arthur D. Little, Inc., Commercial and Industrial Activity in San Francisco: Present Characteristics and Future Trends, June 1975.

[2]Information reviewed with Linda Ferbert, former Deputy Manager, San Francisco Wastewater Management Program, telephone conversation, 2 September 1977.

[3]Primary treatment: The first (sometimes the only) major treatment in a wastewater treatment works, usually sedimentation. The removal of a substantial amount of suspended matter but little or no colloidal and dissolved matter.

section is now under construction. Current plans call for enlargement of the Southeast Plant to a 180-mgd-capacity secondary treatment plant. Construction began in 1978 and will take two and a half years to complete. Upon completion, the Southeast plant will provide treatment for the dry-weather flow now treated at the North Point plant.

2. Solid Waste

The Golden Gate Disposal Company serves the project site. Solid wastes are taken to the San Francisco transfer station immediately west of Highway 101 on the San Francisco-San Mateo County Line, and from there to a sanitary landfill in Mountain View. The Mountain View landfill has a life expectancy of about ten years (1987).[1] Golden Gate Disposal is studying alternative landfill locations and disposal methods.

3. Schools[2]

Four public schools serve the project area. Garfield/Pacific Heights Elementary School at 2340 Jackson Street takes children from kindergarten to third grade. The school has a 1977-1978 enrollment of 243 students and a capacity of 275 students.

Raphael Weill School, 1501 O'Farrell Street, serves grades four through six and has additional capacity for approximately 600 students. The present enrollment is 278.

Francisco Junior High School, 2190 Powell Street, educates grades seven through nine; present enrollment is 781 students; the school has additional capacity for approximately 200 students. Galileo High School, 1850 Francisco, is the senior high school for grades ten through twelve. Enrollment for 1977-1978 is 1,720; the school has additional capacity for approximately 200 students.

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[1]EIP, unpublished data, San Francisco Bay Area Wastewater Solids Study.

[2]James Casassa, School Operations Division, San Francisco Unified School District, interview, 6 September 1977.

IV. ENVIRONMENTAL IMPACTS[1]

A. GEOLOGY AND SEISMICITY

The most common geological hazards are surface rupturing, groundshaking, and ground failure (e.g., liquefaction[2] and seismically induced landslides).

The proximity of the San Andreas and Hayward fault zones makes groundshaking likely at the project site in the event of seismic activity along either of the faults. The San Andreas fault is capable of producing an earthquake of Richter magnitude 8.25 (comparable to the 1906 San Francisco earthquake), and the Hayward fault is capable of producing a Richter magnitude 7± earthquake (comparable to the 1868 Hayward earthquake). Groundshaking is the major factor responsible for damage to structures and loss of life, especially in urban areas, and the project area can be expected to experience

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[1]To allow the relative comparison of anticipated impacts between those of the Levi's Plaza proposal and impacts that would result from previous proposals in the project area, the following documents are cited herein: San Francisco Department of City Planning, Draft Environmental Impact Report, Greenwich Square, Vicinity of Sansome, Greenwich, Union and Front Streets, Case No. CU73.30, EE73.53, 5 June 1973, and San Francisco Department of City Planning, Draft Environmental Impact Report, The Waterfront, Vicinity of Chestnut, Lombard and Sansome Streets, Case No. CU73.12, EE119, 6 March 1973.

[2]Liquefaction: Earthquake-induced transformation of a stable granular material, such as water-bearing sand, into a fluid-like state, similar to quicksand.

severe shaking during a major earthquake. Intensity of groundshaking depends on the distance to the epicenter of the earthquake and the nature of the subsurface. As a result, structures built on Bay muds, artificial fill, or bedrock would experience different magnitudes of groundshaking. In noncohesive, coarse-grained, water-saturated deposits, liquefaction might occur as a result of groundshaking.

If Telegraph Hill were subjected to groundshaking, it is probable that large boulders would fall randomly down the Hill, threatening Blocks A, E and F, and the large slide located at the southwest corner of Block G (see Section III. B.) could be activated, creating hazards to structures and lives at the slide's base. In the absence of groundshaking, the slope would still be unstable because of drainage water percolating through the fractured rocks. The water tends to lubricate the rock fragments, thereby increasing their potential for sliding. This would constitute a constraint on the design of the project rather than an impact of the project.

B. HYDROLOGY

1. Surface Runoff and Water Quality

Urban runoff contains contaminants in the form of suspended solids, nutrients, heavy metals, pesticides, and bacteria; these result from runoff from open areas, deposited vehicle emissions, street surface material, leaf-fall, litter, spills, animal droppings, and atmospheric fallout.

The quantity of stormwater runoff requiring drainage depends on the magnitude of a given rain storm and the characteristics of the land surface. Increasing the amount of impervious surface area (streets, buildings, plaza, etc.) increases the amount of runoff requiring drainage by decreasing the amount of water that can percolate through to the groundwater table.

Of the nine acres included in the proposed project area (excluding streets and the slopes of Telegraph Hill), approximately 60% can at present be considered impervious surface, primarily in Blocks A, B, C, and D.

Most of Block F and all of Blocks E and G currently have no impervious area. If the proposed project is implemented, the impervious surface area would remain approximately the same in Blocks A, B, and C; the proposed park in Block D, with its grass and landscaped areas, would reduce the impervious surface in that area from about 95% to 20%. The greatest increase in impervious surface would occur in Blocks E, F, and G, presently undeveloped, which would be almost completely converted to impervious surface.

The proposed project would increase the impervious surface area of the total site to about 80% an increase of 33%. Stormwater runoff and contaminants from the site would also increase by approximately 33%. The total increase in impervious surface would be about two acres.

In addition to the surface runoff generated on the site, the drainage facilities proposed for construction would have to carry runoff from the north and east sides of Telegraph Hill. The small, year-round ponded area in Block F indicates that the water table may be very close to the surface near Telegraph Hill; such areas would require increased drainage facilities. All runoff from the site would continue to be discharged to San Francisco's combined storm drain/sewer system and would contribute to overflows when runoff exceeds present or future system capacity.

2. Groundwater

The proposed project would have no effect on the groundwater regime in the vicinity of the site. The only major permanent underground facility proposed is the parking area beneath

Building A (see Figure 8, page 22). This structure, extending approximately 15 feet below ground level, would disrupt groundwater flow. Groundwater pumping has been undertaken by the City to reduce rock movement (see Section III. B.) near Kearny and Lombard Streets, where hydraulic forces have resulted in some road and structure displacement. If future engineering studies indicate that this type of subdrainage work should be undertaken on the project site to improve slope stability, some alteration of groundwater flow would result. Since the groundwater is not of sufficiently high quality to be of potential use,[1] flow alteration would not result in any adverse impact.

C. TRANSPORTATION

1. Introduction

The methods used in assessing transportation impacts and the analysis framework are explained in Appendix D. Appendix D also contains the technical details of the impact assessment. This section includes the results of impact analysis.

2. Relationship of Proposed Project to the Transportation Elements of Local Plans

The Transportation Element of the Comprehensive Plan of the City and County of San Francisco[2] designates Battery and Sansome Streets as major thoroughfares intended to carry traffic between districts in the City. They would provide for relatively free-flowing and high-capacity conditions.

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[1] City of San Francisco, Draft EIR for the Greenwich Square Project, 5 June 1973.

[2] Transportation: The Comprehensive Plan, San Francisco Department of City Planning, 27 April 1972.

The plan states (p. 19) that, where possible, vehicular access directly to and from local streets should be from other than major thoroughfares, e.g., via secondary thoroughfares or collector streets. This would especially apply to traffic to and from driveways and parking garages.

Access points to the proposed garages would be from side streets, i.e., from Union Street near Battery into the Block A garage; from Lombard near Montgomery into the Block F garage (residential section only), from Greenwich west of Sansome into the Block F garage (public section), and from Montgomery south of Chestnut into the Block G garage.

The City-wide transportation plan shows Sansome and Battery Streets as transit arterial streets, i.e., preference is given to transit vehicles; it recommends that the design of these two arterials facilitate movement of the Marin commuter buses. These recommendations agree with those expressed in the Golden Gate Long Range Transportation Program.[1] This report shows both thoroughfares with an exclusive bus lane during peak hours.

The proposed Levi's Plaza project would not conflict with these plans. Its design would allow for the exclusive transit lanes and would provide space for bus stops. The project would increase the demand for public transit in the area.

The Plan for the Northeastern Waterfront[2] further reinforces the objectives of developing transit as a primary mode of travel. In addition it recommends to:

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[1]Phase II-Element A San Francisco Transit Route Studies submitted to Golden Gate Corridor Board of Control, April 1975, prepared by Kaiser Engineers.

[2]A part of the Master Plan of the City and County of San Francisco, adopted 19 January 1977.

"limit additional parking facilities in the Northeastern Waterfront and minimize the impact of this parking. Discourage long-term parking for work trips which could be accommodated by transit. Restrict additional parking to: (1) short-term (less than four hours) parking facilities to meet needs of additional business, retail, restaurant, marina, and entertainment activities; and (2) long-term parking facilities for maritime activities, hotel, and residential uses. To the extent possible, locate parking away from areas of intense pedestrian activity."

The proposed long-term parking spaces for project employees conflict with this policy.

3. Additional Travel Volumes into Downtown San Francisco

Table 7 shows the proportions estimated for each travel mode, if the proposed project is carried out. They represent modal splits of the project employees as they enter downtown San Francisco. The underlying assumptions for these modal splits, including improvements in MUNI service, are explained in Appendix D.

TABLE 7

Travel Modes of Project Employees into Downtown San Francisco

Primary travel mode[1]	Percent split
MUNI	24.0%
BART	20.0
Car driver	17.5
AC Transit	7.0
Golden Gate Transit	9.0
Ferry	4.5
Car Passenger	5.0
Walk	4.0
SP train	2.0
Greyhound	1.0
Other (bicycle, taxi)	6.0
Total	100.0%

[1]When the base data for this table were collected, SAMTRANS (San Mateo County Transit), did not yet operate into San Francisco.

Based on the modal split estimates and on the total number of employees, the travel volumes are estimated for each mode, for employees and for visitors. Table 8 summarizes the additional travel volumes for the major modes. Peak-hour travel volumes in the morning and afternoon are each assumed to be 33% of the total daily employee travel volumes. This means that about 2/3 of all project-generated employees entering or leaving the downtown area within the peak commute hours (i.e., during the peak hours of the road network and of the MUNI routes in the downtown area) do so between about 7:30 a.m. and 9 a.m. and between 4:30 p.m. and 6 p.m. These assumptions are based on ridership statistics of MUNI, on a discussion with a Levi Strauss representative regarding the arrival and departure times of their employees,[1] and on general commute peaking characteristics.

The additional vehicle trips generated by the proposed project into and out of downtown San Francisco are estimated at 1,930 daily trips. Additional transit trips are summarized in Table 8. Their impacts are analyzed on page 103.

4. Future No-Build Traffic Conditions on Adjacent Streets

No traffic projections are currently available for the streets that would be affected by the proposed project. If the project is not built the following growth rates (based on "worst-trend" assumptions[2]) can be assumed:

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[1]Mr. Hersch Goldberg, Levi Strauss, phone conversation, 23 January 1978.

[2]Scott Shoaff, Associate Traffic Engineer, San Francisco Department of Public Works, phone conversation, 25 August 1977.

TABLE 8

Additional Travel Volumes into Downtown San Francisco

Travel Mode	Modal split	Daily employee trips[1]	Additional visitor trips	Total daily trips	Peak-hour trips
MUNI	24.0%	1,590	n.a.[2]	n.a.	530
BART	20.0%	1,320	n.a.	n.a.	440
Car Driver	17.5%	1,160	770	1,930	430[3]
AC Transit	7.0%	460	n.a.	n.a.	150
Golden Gate Transit	9.0%	600	n.a.	n.a.	200
Ferry	4.5%	300	n.a.	n.a.	100
SP Trains	2.0%	130	n.a.	n.a.	40
Greyhound	1.0%	65	n.a.	n.a.	20[4]

[1]Total of trips each way; based on a total of 3,310 employees.

[2]n.a. - not applicable

[3]Includes 5% of daily visitor trips

[4]A.M. or P.M. Peak-hour

Note that these travel volumes do not include the volumes generated by the residential units proposed in the project. The reason for this is that the travel volumes generated by the residences woudl occur in the direction opposite to the peak commute direction and would represent only about 5 percent of the commute volumes. Furthermore, only part of these residential volumes would leave downtown San Francisco.

+ 1.5 percent per year for The Embarcadero

+ 1.0 percent per year for Battery, Sansome and others

The traffic impacts of the proposed project are analyzed for the year 1982, after the project would be completed. The daily traffic projections for 1982 without the project would be:

Sansome Street	10,680 vehicles
Battery Street	9,280 vehicles
Union Street	740 vehicles
Front Street	3,150 vehicles
Greenwich Street	1,580 vehicles
Filbert Street	1,470 vehicles
The Embarcadero	28,000 vehicles
Lombard Street	4,060 vehicles
Montgomery Street	3,950 vehicles

It is assumed that peak-hour traffic will grow proportionally to the average daily traffic (ADT).

5. Traffic Impacts of the Proposed Project on Adjacent Streets

The amount of additional traffic generated on adjacent streets by the proposed project would depend chiefly on the amount of additional parking provided by the project. It is the number of parking spaces supplied, rather than the number of employees or square feet of commercial area, that would determine the traffic increases generated by the project on the adjacent streets. The only vehicle trips generated by the proposed project on adjacent streets not determined by the number of parking spaces (i.e., not ending in a parking space) are delivery trips by car, van, truck, or bicycle, or passenger drop-off and pick-up trips. This number of vehicle trips is small compared to those generated by parking stalls. Furthermore, only part of these vehicle trips would

represent new, additional trips. The remainder represents delivery vehicles that are already circulating on the streets and will do so with or without the proposed project. The number of parking spaces shown on the preliminary plan is:

Under Block A	160 spaces
On Block F	825 spaces
On Block G	150 spaces
Total spaces added	1,135 spaces

To estimate the additional traffic generated on the adjacent streets by the proposed project, turnover rates must be assumed for each parking facility. To cover a worst-case situation, a 100% occupancy is assumed with a relatively high turnover rate for the spaces that would be added and a low turnover rate for the spaces that would be eliminated. The proposed project would eliminate approximately 612 existing off-street parking spaces. (See Table 4). The following is a summary of these assumptions:

Parking Facility	Spaces	Turnover rate[1] (vehicles/space/day)	Vehicles/day
Block A	+160	2.0	+ 320
Block F	+825	2.25	+1856
Block G	+150	1.5	+ 225
Existing parking	-612	1.2	- 734
Total	+523		+1667

[1] AMV estimates

The maximum amount of additional daily traffic generated by the proposed project on the adjacent streets would thus be at most 1,670 vehicles, or 3,330 vehicle trips.[1]

No information exists on how the additional traffic would be distributed over the existing street network. The following are the possible routes and the worst-case distribution of additional traffic. The total distributions add up to more than 100% because potential maximum distributions have been assumed for each route.

- To and from the south (Battery and Sansome) 60%
- To and from the east (Union)[2] 5%
- To and from the north (The Embarcadero via Battery and Sansome) 40%
- To and from the north (Montgomery) 15%

These traffic proportions have been assigned to individual road sections based on the location and number of parking spaces proposed:

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[1]Note that the above traffic generation estimates based on the number of parking spaces and on their turnover rate, result in about 73 percent more vehicle trips than the additional vehicle trips generated by the proposed project into downtown San Francisco (based on the number of employees and visitors and on their modal splits). This is due to the worst-case assumptions used for parking occupancies and turnover rates.

[2]Assumes that Union Street is directly connected to The Embarcadero, as envisioned in the Plan for the Northeastern Waterfront.

Daily inbound traffic:

Sansome Street (Broadway to Greenwich)	60%	(1000 vehicles)
Battery Street (The Embarcadero to Lombard)	40%	(667 vehicles)
The Embarcadero (Bay to Battery)	40%	(667 vehicles)
Greenwich Street (Battery to Sansome)	30%	(500 vehicles)
Lombard Street (Sansome to Montgomery)	15%	(250 vehicles)
Montgomery Street (Francisco to Lombard)	15%	(250 vehicles)
Union Street (Battery to Sansome)	10%	(167 vehicles)
Union Street (Front to Battery)	5%	(83 vehicles)

Daily outbound traffic:

Battery Street (Union to Broadway)	60%	(1000 vehicles)
Sansome Street (Lombard to the Embarcadero)	40%	(667 vehicles)
The Embarcadero (Sansome to Bay)	40%	(667 vehicles)
Greenwich Street (Sansome to Battery)	30%	(500 vehicles)
Lombard Street (Sansome to Battery)	25%	(417 vehicles)
Lombard Street (Montgomery to Sansome)	15%	(250 vehicles)
Montgomery Street (Lombard to Francisco)	15%	(250 vehicles)
Union Street (Sansome to Battery)	10%	(167 vehicles)
Union Street (Battery to Front)	5%	(83 vehicles)

Table 9, page 107, summarizes the daily and peak-hour traffic increases on the adjacent streets. The highest absolute increases would occur on The Embarcadero between Bay and Sansome Streets (+1,330 ADT) and the highest relative increase (144%) would occur on Union Street between Battery and Sansome. Peak-hour traffic increases have been assumed to be 20% of 24-hour traffic increases onto one-way streets (Sansome and Battery) and 15% of 24-hour traffic increases onto two-way streets.

TABLE 9

Estimated Traffic Increases Due to Project

Street	Section	1982 ADT w/o project	ADT increase due to project	Peak-hour[2] increase	1982 ADT with project	Percent increase
Sansome	Broadway-Greenwich	10,680	1,001	200	11,700	9%
Sansome	Lombard-Embarcadero	10,680	667	133	11,300	6%
Battery	Union-Broadway	9,280	1,001	200	10,300	11%
Battery	Embarcadero-Lombard	9,280	667	133	9,900	7%
The Embarcadero	Bay-Sansome	28,000	1,334	200	29,300	5%
Lombard	Montgomery-Battery	4,060	500	75	4,600	12%
Greenwich	Sansome-Battery	1,580	1,735[1]	260[1]	3,300[1]	110%[1]
Montgomery	Lombard-Francisco	3,950	500	75	4,450	13%
Union	Battery-Sansome	740	1,069[1]	160[1]	1,800[1]	144%[1]
Union	Front-Battery	740	902[1]	135[1]	1,600[1]	122%[1]

[1]Includes half of the vehicles that would be diverted from Filbert Street plus new vehicles generated by the proposed project.

[2]A.M. or P.M. Peak-hour, depending on direction, if one-way street.

Table 10, page 109, shows the 1982 peak-hour traffic conditions with and without the proposed project. On The Embarcadero the 1982 peak-hour volumes with the project would be about 11 percent higher than the 1982 no-project conditions. This represents a worsening of traffic congestion to level of service D/E[1], which is close to the maximum possible capacity.

On Sansome, between Broadway and Greenwich, the 1982 peak-hour traffic would be about 27% higher with the project. Peak-hour traffic, with the project, would represent less than 50% of the capacity of that section of Sansome Street.

The higher peak-hour volume with the project would make the morning level of service of the Broadway-Sansome Street intersection worse. A large proportion of this higher volume would be vehicles coming from the Broadway freeway off-ramp and making a right turn onto Sansome.

On Sansome, between Lombard and The Embarcadero, the peak-hour traffic would be 17% higher with the project. This would lower the level of service at The Embarcadero intersection from about C to E.

The exit from the 614-car garage on Block F (excluding the 211 residential parking spaces) would be located on Sansome Street at about 150 feet south of Lombard Street. Weaving conflicts would occur between existing through traffic on Sansome Street and traffic that wants to turn right onto Lombard Street to drive eastbound toward Battery Street. Based on the traffic distribution estimates and on peak-hour factors, there would be approximately 100 vehicles that would want to weave through the two traffic lanes to make a right turn during the peak afternoon hour.

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[1]See Appendix D for definition of levels of service.

TABLE 10

Peak-Hour Traffic Conditions With and Without Project[3]

Street	Section	Peak-hour capacity[1]	1982 without project[2] Peak-hour traffic	LOS	1982 with project Peak-hour traffic	LOS
Sansome	Broadway-Greenwich	2,600	750	A	950	A
Sansome	Lombard-Embarcadero	900	750	C	880	E
Battery	Union-Broadway	875	790	D/E	990	F
Battery	Embarcadero-Lombard	2,600	790	A	920	A
Embarcadero	Bay-Sansome	2,250	1,900	D	2,100	D/E
Lombard	Montgomery-Battery	800	365	A	440	A
Greenwich	Sansome-Battery	800	160	A	420	A
Montgomery	Lombard-Francisco	800	355	A	430	A
Union	Battery-Sansome	600	100	A	260	A
Union	Front-Battery	600	100	A	230	A

LOS= Level of Service

[1]One-way capacity at level of service E (maximum capacity).

[2]Figures given are based on 1982 ADT without project (Table 17) and on existing peak hour factors (Table 5).

[3]Conditions for the most critical peak-hour, (AM or PM).

On Battery between Union and Broadway peak-hour volumes would be 25% higher with the project. Level of service would reach F. Traffic congestion would occur at certain peak moments and traffic would divert to other, parallel streets, such as Front and The Embarcadero to avoid the bottleneck. Therefore, level of service F would not occur on a regular basis.

The section of Battery Street between The Embarcadero and Lombard has a higher capacity than the section between Union and Broadway. Its level of service would remain within the A range.

Traffic on The Embarcadero between Bay and Sansome would increase by about 11% during peak hours as a result of the proposed project. It would reach about 93% of the maximum capacity of The Embarcadero.

On Greenwich and Union Streets, east of Sansome, traffic volumes would more than double as a result of the increased traffic generation of the proposed project and because of the closure of Filbert Street. Traffic volumes would, however, remain below capacities and level of service would remain with the A range.

The closure of Filbert Street would improve traffic flow along Sansome and Battery.

On Lombard Street between Battery and Montgomery, and on Montgomery Street between Lombard and Francisco, peak-hour volumes would increase by about 21%. The number of traffic conflicts would increase along these streets, especially near the new driveways into Blocks F and G. Traffic volumes would not exceed 55% of the capacities of these streets and levels of services would remain within the A range, which is defined as a free flow condition.[1]

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[1]See Appendix D for level of service description.

Note that the above traffic impacts are based on worst-case assumptions regarding parking occupancy and turnover rates and the traffic distribution and assignments. The impacts would probably not occur as described on all links simultaneously.

6. Impacts on Parking

The proposed project would eliminate approximately 612 parking spaces (545 off-street and 67 on-street parking spaces, Table 4 page 63). During a survey of these spaces, as many as 550 (90%) were occupied at one time (see Table 4). If the proposed project is built, this demand for 550 parking spaces would remain unsatisfied except as it would be filled by the parking facilities in the project, the Francisco Bay garage on Francisco Street between Montgomery and Kearny, and the garage in the One Lombard Street building. About 23 of these spaces are located at the Greenwich stub and allow the Telegraph Hill residents with "A" parking permits to park for more than 2 hours. The project would reduce the demand by eliminating three businesses and commercial establishments which now generate a demand for an estimated 9 to 21 spaces, assuming an average of 3 to 7 spaces required for each business. Thus, the additional unsatisfied demand would be for 529-541 spaces.

Based on the estimated additional vehicle traffic generated by the employees and visitors of the proposed project into downtown San Francisco (see Table 8, page 102), and based on average daily turnover rates (1.0 for employee vehicles and 3.0 for visitor vehicles), the additional vehicle trips, converted into vehicles, can then be converted into parking demand generated by the proposed project as follows:

parking demand of employees:

$$\frac{1160}{2x1} = 580 \text{ spaces}$$

parking demand of visitors:

$$\frac{770}{2x3} = 130 \text{ spaces}$$

parking demand of condominiums:

one per dwelling unit for daytime = 336 spaces[1]

<u>total parking demand of project: 1046 spaces</u>

It should be understood that this is the parking demand generated by the proposed project. The future employers are, however, not obligated to provide parking for their employees, and most would not do this. Levi Strauss, for instance, does not provide any parking for its employees. Therefore, a certain proportion of this demand would actually not be satisfied in the project itself. This proportion would depend on the parking price rates that would be charged. It is expected that many employees would try to find cheaper or even free parking close-by. They would be competing for inexpensive parking with those people currently using the project site for parking.

The sponsor of the proposed project has an agreement with the Ice House to provide its employees and customers exclusively 120 spaces under Block A. If these spaces are added to the project demand, the total demand would be for 1,166 parking spaces.

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[1]Worst case. The project sponsor proposes to build 311-336 condominium units.

The project sponsor proposes to build 1,135 spaces, which would be 31 spaces or 2.7% short of the estimated demand. In view of the margin of error of the estimating procedure of ±10 percent, this proposed supply is considered to be adequate for the estimated demand generated by the project employees, visitors and residents. If the eliminated on-site parking spaces are included, the parking demand in the project area would exceed the supply by about 560 to 572 spaces.

The San Francisco Planning Code gives the following parking requirements:[1]

Residential:	1 space per dwelling unit
Business Office:	1 space per 500 square feet of occupied floor area where the floor area exceeds 5,000 square feet
Retail Space:	1 space per 500 square feet of occupied floor area up to 20,000 square feet where the floor area exceeds 5,000 square feet, plus one space for each 250 square feet of occupied floor area in excess of 20,000.

Based on 336 dwelling units in the project, a total of 671,000[2] net occupiable square feet of business office and about 22,400 net square feet of retail space, plus the 120 spaces necessary to meet the Ice House parking requirement, a total of 1,848 parking spaces would be required (336 for the residential units, 120 for the Ice House, and 1,392 for the office and commercial space). The proposed 1,135 parking spaces would fall short of meeting the parking requirement by 713 spaces.

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[1]Source: Staff Guidelines for Development: Northern Waterfront Blocks - Bounded by Union, Sansome, Greenwich, and Battery Street.

[2]Net square feet computed at 80% gross.

A zoning variance for parking requirements would have to be obtained. Granting such a variance would be in compliance with the objectives and policies stated in the Plan for the Northeastern Waterfront. See Section IV.C.2. Relationship of Proposed Project to the Transportation Elements of Local Plans.

An investigation of existing parking facilities in the study area[1] indicated that on an average day there are about 80 to 100 vacant parking stalls available in the Francisco Bay parking garage on Francisco Street between Montgomery and Kearny, and that the parking garage in the One Lombard Street building may have an excess of 20 to 30 unoccupied spaces available. The need for parking spaces of the tenants of One Lombard Street when fully occupied, does not appear to be as high as originally planned. An additional supply of about 100 parking spaces would thus be available in the area and drivers who currently park on the project site would likely use these facilities once project construction begins.

7. Impacts on Transit

Table 8, page 102, shows the additional travel volumes that would be generated on the different modes into and out of downtown San Francisco. Additional trips on transit are summarized as follows:

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[1]AMV phone calls with parking managers and attendants 24-30 January 1978, and on 5 May 1978 with Mr. Lopez from the Francisco Bay Garage.

Transit system	Daily employee trips (during commute hours)	Afternoon peak-hour trips[1]
MUNI	1590	530
BART	1320	440
AC Transit	460	150
Ferry	300	100
Golden Gate buses	600	200
SP trains	130[2]	40[2]
Greyhound	65[2]	20[2]

These additional ridership volumes occur at peak periods when the transit systems already operate at or close to capacity. For all transit systems except MUNI, the ridership increases are within the annual growth rates of these systems.

If the travel volumes arriving in downtown San Francisco by MUNI, BART, AC Transit, SAMTRANS, the Southern Pacific railroad, and ferry are assigned to the MUNI routes that serve the project site (32, 15 and 42), capacity increases would be required as these routes would have to carry the travelers transferring from the non-MUNI modes (other than the Golden Gate Transit), as well as those originating (on MUNI) in San Francisco. During peak hours an additional 1,260 passengers would have to be carried by these routes or the ones that will replace them. About 70 of the 530 additional riders on MUNI would arrive in the off-peak direction, i.e., from the Northern Waterfront area. The peak-hour, peak-direction ridership increase on routes 32, 15 and 42 would thus be about 1,190. Assuming an average number of

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[1]It is estimated that the overall afternoon peak hour is between 4:45 p.m. and 5:45 p.m., but for a particular mode it could be anywhere between 4:30 p.m. and 6:00 p.m.

[2]Some of these trips may be made on SAMTRANS buses.

42 seated passengers per bus and 32 standees, the ridership increase would require an additional 16 buses during the peak hour. About 11 of these buses would be required on the 15 and 42 routes, and 5 on the 32 route. This means that the combined frequency near the project site of routes 15 and 42 during peak hours would have to be about four minutes instead of the existing 15 minutes. The peak-hour frequency of route 32 would have to be about six minutes instead of the existing 10-15 minutes. As previously indicated, some bus improvements are currently planned for this corridor, but nothing specific has yet been adopted.

Assuming that each additional bus during peak hour requires one additional full-time driver plus equipment, the MUNI capacity increase is estimated to cost approximately $350,000 to $700,000 per year. If funds were not available to pay these costs, then transit service would decrease and this disincentive for transit use could result in more vehicular traffic. See Section VII.I.1, page 183, Mitigation Measures.

8. Loading and Unloading

The preliminary plans for the proposed project show loading docks for each of the major buildings along Union and Greenwich Streets. These loading areas are always perpendicular to the street within the project property line.

The loading dock for Block A would be located on Union Street about 70 feet west of Battery. This would be just before Union Street narrows to about 20 feet in front of the Ice House. For Block B the loading dock would be on Greenwich Street about 50 feet east of Sansome and for Block C the loading dock would be on Union Street about 40 feet west of Front Street. Trucks and service vehicles would have access to these loading areas from Battery, Sansome, and The Embarcadero.

These loading docks would be located on secondary streets carrying fewer than 3,400 daily vehicles (Table 10, page 109). The total number of service vehicles attracted by the proposed project is estimated at about 120 vehicles per day. Between 25 and 30 of these vehicles would be large trucks.[1] The number of conflicts between maneuvering trucks and traffic would therefore be about one every 15 minutes somewhere in the project area.

Some loading spaces would have to be reserved during certain hours on Sansome Street in front of the shops proposed on Block F. The developer would have to apply to the San Francisco Department of Public Works to have a yellow zone established.

9. Pedestrian Circulation

Pedestrain and vehicular traffic would conflict at two points: on Sansome Street at the current Filbert Street intersection, and on Battery Street, also at Filbert Street. There are now pedestrian crossings at these locations. With the proposed project (closing of Filbert Street plaza west of Battery Street) these locations would become crossing points for major pedestrian movements. The project sponsor proposes that the pedestrian crossings be about 40 feet wide.

The critical period for the Sansome Street crossing would be during the p.m. commute rush hour when the commute traffic (about 880 to 950 vehicles per hour) would conflict with the employees walking to or from the Filbert Steps or the garage on Block F. Based on the number of employees who would work in the proposed project an estimated maximum of

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[1] "Commercial Vehicles in a Large Central Business District," William Marconi, Senior Traffic Engineer, San Francisco Department of Public Works (Figures 6-9). Available for public review at the Department of City Planning Office at 45 Hyde Street.

250 pedestrians would want to cross Sansome Street at this location during the peak hour. This presents no capacity problems for the vehicular traffic.

Additional pedestrians would cross Sansome Street at Greenwich. This movement would be lighter than that at Filbert Street.

The critical period for the Battery Street crossing would be during the lunch period, when employees from Blocks A and B would walk to the proposed park on the triangle between Battery and The Embarcadero. Assuming good weather, one-third of the employees working on Blocks A and B could conceivably cross Battery Street in one direction during the peak hour. These pedestrians would be in conflict with about 400 vehicles per hour. Enough gaps should exist in the vehicle flow to allow the pedestrian movement without capacity problems.

10. Preservation of Future Options

Flexibility to adapt to possible future decreases in automobile use could be preserved by designing some or all of the proposed parking space so as to facilitate conversion to other uses. This would be particularly appropriate for the above-grade parking levels in the Block F parking structure and condominiums building. City staff will discuss this possibility with project sponsor.

D. ATMOSPHERE

1. Air Quality

a. Temporary Impacts

Construction of the proposed project would result in a short-term increase in suspended particulate matter. Since wind speeds on the site are the highest along The Embarcadero, the highest dust generation would occur during construction of Building C and the park in Block D. These temporary impacts would result in an occasional nuisance to pedestrians and businesses immediately south of Union Street between Front and Sansome Streets.

b. Permanent Impacts

1) Local effects. The most common air quality problem on the local scale is carbon monoxide (CO).[1] Concentrations due to local traffic have been estimated for meteorological conditions that restrict diffusion of CO.[2] These concentrations represent the contribution of local traffic only, and do not include background levels. To predict actual concentrations, a "background factor" of 27 percent of the local traffic contribution is added to the level resulting from the local traffic. (Traffic input information is given on pages 120 and 123.) Vehicle pollution emissions rates were taken from data supplied by the Bay Area Air Pollution Control District,[3] updated by the most recent ("Supplement 8") emission factors. In predicting pollution emission rates, average speeds of 20 mph for the 8-hour average and 10 mph for the peak 1-hour time period were assumed. Existing and predicted roadside concentrations of CO were developed for The Embarcadero and Battery Street (between Union Street and The Embarcadero); maximum extended pedestrian use would occur in areas along these streets (the park in Block D and the plaza between Buildings A and B). The results for "worst case" meteorological conditions and the local traffic contributions are summarized in Table 11.

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[1]CO (carbon monoxide): A clear, odorless gas which in high concentrations can cause dizziness, unconsciousness, and even death. The major source of carbon monoxide is the automobile. High concentrations of carbon monoxide are mainly a local problem, occurring near areas of heavy auto traffic when ventilation is poor.

[2]One-meter-per-second (2.2 mph) wind forming a 22-1/2 degree angle with the roadway, under stable atmospheric conditions.

[3]Bay Area Air Pollution Control District (BAAPCD), Guidelines for Air Quality Impact Analysis of Projects, Technical Services Division Information Bulletin, 1 June 1975.

It can be seen the concentrations resulting from the local contributions in Table 11 plus the 27% factor result in levels which are below the federal ambient air quality standards for carbon monoxide (35 and 9 parts per million for the one-hour and eight-hour averaging times, respectively). Improvement in CO levels is anticipated, despite increased traffic (with or without the proposed project), due to federal and state emission controls. However, this improvement is not predicted to last beyond about 1985, at which time increased traffic will begin to outweigh reductions from emission control.

TABLE 11

Local Contribution to Carbon Monoxide Concentration
(parts per million)

	Embarcadero		Battery Street	
	1-hour average	8-hour average	1-hour average	8-hour average
1977 (present)	7.2	2.5	2.5	0.9
1982				
With project	6.7	2.4	2.4	0.8
Without project	6.3	2.2	2.2	0.7
Federal ambient quality standard	35.0	9.0	35.0	9.0

In summary, 1982 project-generated traffic would increase CO emissions by 10-15% on Battery Street and 6-10% on The Embarcadero.

Another source of local pollutants would be combustion of fuel oil for space heating. With fuel oil, the major exhaust components would be sulfur dioxide, particulates, and nitro-

gen dioxide. Because of the relatively small quantity of fuel burned, the dispersed nature of the individual sources, and the high ventilation of the site by relatively steady winds, problems of localized high concentrations of pollutants due to fuel combustion are not considered likely.

2) Regional effects. Regional effects are related to the vehicle miles traveled (VMT) associated with the project and consumption of fuel for space heating. Maximum daily VMT have been estimated for the project assuming a total increase of 1,930 vehicle trips per day. (Refer to Transportation Impacts, Section IV.C.) An average one-way trip length of ten miles has been estimated by the transportation subconsultant.

Emissions estimates are based on emission factors[1] for an average trip speed of 25 miles per hour. Projected daily emissions, together with estimated future regional emissions for the nine-county Bay Area are shown in Table 12, p. 123.[2]

Emissions generated by combustion of fuel oil for space heating were based on an estimated consumption of 6,8000 barrels of fuel oil per year, an estimated 260 days of operation per year, and published emission factors.[3]

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[1]BAAPCD, Guidelines for Air Quality Impact Analysis of Projects, 1975, updated with "Supplement 8" emission rate.

[2]BAAPCD, Source Inventory of Air Pollutant Emissions in the San Francisco Bay Area, 1973.

[3]U.S. Environmental Protection Agency, Compilation of Air Pollutant Emission Factors, Second Edition, AP-42, December 1975.

The increase in regional emissions shown in Table 12 would result in a degradation of regional air quality. Of particular importance are increases in hydrocarbons[1] and oxides of nitrogen, which result in the formation of photochemical[2] oxidant. A recent study of future regional air quality[3] found that photochemical oxidant would be a persistent problem in the future, and that substantial reductions in hydrocarbon and nitrogen oxide[4] emissions would be necessary to attain the federal standard for photochemical oxidant in the Bay Area. In that the project increases emissions of these pollutants, it would necessarily delay the attainment of the standard, although the effects of the project would not likely be measurable.

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[1]Hydrocarbons: As air pollutants, result from incomplete burning of organic substances and range in complexity from simple gases to complex compounds. They react in the atmosphere with oxides of nitrogen to form photochemical smog.

[2]Photochemical oxidant: Formed in a complicated series of chemical reactions between nitrogen dioxide and organic compounds, under the influence of the ultraviolet energy in sunshine. Production of oxidant is promoted on warm, sunny days when ventilation is low.

[3]Association of Bay Area Governments, Draft Environmental Management Plan, December 1977.

[4]Nitrogen Oxides: Gases, mainly brown nitric oxide (NO) and colorless nitrogen dioxide (NO_2) formed during combustion at high temperatures; their main source is automobiles. They react with sunlight in the atmosphere and are involved in the production of photochemical oxidant, a component of smog.

Table 12

Daily Project-Generated Emissions
(tons/day)

	Fuel combustion emissions	Automobile emissions	Total project emissions	Estimated regional emissions 1980	1985
Carbon monoxide	0.002	0.60	0.60	2,500	2,400
Organics	0.001	0.08	0.08	950	1,050
Nitrogen oxides	0.03	0.15	0.18	750	1,000
Sulfur oxides	0.04	0.01	0.05	700	1,200
Particulates	0.008	0.01	0.02	200	300

The increased use of fuel oil for space heating, as natural gas resources decline, will raise the rate of sulfur dioxide emission.[1] While presently only a minor and infrequent problem, projections show that in the next ten to twenty years exceedances of the standard for sulfur dioxide are expected more frequently.[2]

[1]Bay Area Air Pollution Control District, Source Inventory of Air Pollutant Emissions, 1973.

[2]San Francisco Planning Commission and San Francisco Redevelopment Agency, Environmental Impact Report: Yerba Buena Center, EE77-220, 1978.

2. Microclimate (Wind, Sun and Shade)

The design features of the proposed project were analyzed to evaluate effects on pedestrian comfort due to shading and windiness.

The major pedestrian use would occur in the landscaped plaza between Buildings A and B, and in the park in Block D. In the absence of clouds, the relatively low height of Building C and the terraced design of Building A would leave most of the plaza and virtually all of the park sunny during peak-use, noontime hours (between 11 a.m. and 1 p.m.) throughout the year.[1] Telegraph Hill, to the southwest, would cast late afternoon shadows on the site. The time at which the first shadows would reach the western edge of the plaza and the time at which the entire project area, including the park, would be in shadow are as follows:

Season	Time shadows reach plaza[2]	Time shadows cover project area
Summer	6:30 p.m.	7:30 p.m.
Fall	5:30 p.m.	6:30 p.m.
Spring	4:30 p.m.	5:30 p.m.
Winter	3:00 p.m.	4:00 p.m.

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[1]All solar radiation data from: List, R. J., Smithsonian Meteorological Tables, Sixth Revised Edition, 527 pp, 1951.

[2]"Time" refers to local time; Pacific Standard Time, in winter and spring, Pacific Daylight Time in summer and fall.

This information, taken together with the data on possible sunshine for various times of the year, shows that during the peak-use hours in the late morning and early afternoon (10 a.m. to 2 p.m.) most of the plaza and park areas would be sunny about 59% of the time in winter, 70% of the time in spring and fall, and 68% of the time in the summer.

Building F would also affect local sun-shade patterns. Its position directly south of Telegraph Landing would reduce potential sunshine at Telegraph Landing by 40-50%; this is based on the fact that sunshine from the south to the Telegraph Landing is currently blocked only by Telegraph Hill to the south. The proposed Building F would allow 10:00 a.m. - 2:00 p.m. sunshine to reach Telegraph Landing only when the sun is at an angle of 50° or greater with the horizon (approximately between April and September).

Wind velocity is the second major comfort factor usually affected by urban design. As discussed earlier (Section III. E.) the project area is in a location affected by northwesterly winds. Wind speeds are generally highest in the summer and lowest in early winter. Most of the plaza between Buildings A and B would be protected from winds by Building B, making this the most comfortable area on the site during windy periods. The park in Block D, having fewer upwind obstructions and being out of the shelter of Telegraph Hill, would experience the highest wind speeds on the project area. Wind speeds sufficiently high to cause discomfort would occur in the proposed park on Block D approximately 20% of the time during summer months, 5-15% of the time during spring and fall, and less than 5% of the time in winter.

E. NOISE

1. Construction Noise Impact

Criteria. The criteria that apply to construction activities in San Francisco are contained in Ordinance 274-72, "Regulation of Noise," Sec. 2907. The ordinance requires that all powered construction equipment, except impact tools and equipment, emit not more than 80 dBA[1] measured at 100 feet. Impact tools and equipment, including pavement breakers, jackhammers, and pile drivers, must have both intake and exhaust muffled to the satisfaction of the Director of Public Works. The ordinance further requires a special permit for construction after 8 p.m. and before 7 a.m.

Noise impacts caused by construction activities vary depending on the following variables.

- the duration of a particular construction activity
- the type(s) of equipment used
- the noise emission of a particular item of equipment during its "noisy" operation
- the proportion of a day during which the equipment is operated in its "noisy" mode
- the mobility of the equipment (e.g., the noise source may be a stationary air compressor or a self-propelled back-hoe)
- The distances between the noise source and the receptors
- the propagation characteristics of the path between the noise source and receptor (e.g., shielding by a barrier would result in a reduced noise level at the receptor)

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[1] See definitions on page 67.

In order to estimate possible construction noise impacts, this analysis assumes typical equipment and construction techniques.

Construction of the Levi's Plaza project would not occur during evening or nighttime hours, and no noise impact would occur during those hours. Construction activities would be a noticeable noise source during work hours.

The excavation of Block A and the driving of piles on Block C would create the greatest amount of noise during construction. On Block A, pneumatic rock drills would be used to excavate the rock and rotary drills would be used to drill foundation pier holes. On Block C, foundation piles would be driven with a pile driver. Rock drills typically emit 87-98 dBA at 50 feet and pile drivers about 100 dBA at 50 feet. Foundation piles would not be required for Block F.

During the excavation of Block A and the driving of piles on Block C (the amount of time spent on these activities would be approximately two to four months and occur between the hours of 7 a.m. and 3 p.m.[1]), maximum noise levels at the outside of the nearest residences on Telegraph Hill would be about 82 dBA. Maximum outside noise levels at these residences presently are about 70 dBA. A 12-dBA increase would be perceived subjectively as twice as loud. Indoor maximum levels would be approximately 60 dBA. This level is equivalent to normal voice levels at a distance of three to five feet. At greater distances more vocal effort would be required to speak over the pile driver noise.

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[1]Telephone conversation with Phil Chesnutt, Stolte Inc., October 1977.

During excavation of Block E maximum noise levels of up to 90 dBA would occur outside the nearest home (100 feet from the proposed building) on Telegraph Hill. This maximum noise would be emitted by rock drills during excavation for the foundation. Interior maximum levels would be about 70 dBA. As present exterior maximum noise levels at this residence are about 70 dBA, an increase in maximum noise levels of about 20 dBA could be expected during this phase of construction. A 20 dBA increase would be perceived subjectively as about four times as loud. Noise could be expected to disrupt activities and cause annoyance during this phase of construction.

The commercial buildings along Union Street across from Blocks A and C would be exposed to maximum exterior levels of 100 dBA when pile driving is taking place at the nearest foundation line directly across the street. This noise level would be less - about 82 dBA - when piles are being driven on the opposite side of the site. The maximum interior levels that would result in these buildings would be 75 dBA during the closest activity and 57 dBA when the activity is taking place on the northern edge of Blocks A and C. During the rock excavation and pile driving, employees in these buildings would be annoyed and distracted by the construction noise. A construction safety fence erected around the site would decrease these noise levels on street level by about 5 dBA; no reduction would be provided for the upper floors.

The noise impact on the surroundings of construction activities other than excavation and pile driving would vary depending primarily on which blocks are undergoing construction. Construction on Blocks E, F, and G would be the closest to the residential area on Telegraph Hill and the apartments at Telegraph Landing. Maximum noise levels in these areas would

be about 84 dBA during site preparation and building erection. These levels would occur only when construction is taking place along the edge of a block; during most of the construction maximum noise levels in these surrounding areas would be 6-10 dBA lower. These levels would change the quality of the noise environment during construction and would cause annoyance. During interior construction work, noise levels would be about the same as existing noise levels and no noise impact would be expected.

2. Post-Construction Noise Impact on Existing Development

Criteria. Criteria applicable to the impact of noise on existing land uses are:

- Change in noise level due to the project. The change in noise level will be described in terms of the L_{10}[1] and the L_{dn}, as the City of San Francisco uses L_{10} to assess traffic noise impact[2] and L_{dn} to assess land use compatibility.[3]

- Comparison of the post-construction noise environment of a given existing land use to the noise environment goals for the land use suggested by the Transportation Noise Section of the Environmental Protection Element of the Comprehensive Plan of San Francisco (Table 14, page 132).

a. Traffic Noise

Post-construction noise levels in the project area would continue to be dominated by traffic noise. The increase

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[1]See definitions on pages 67 and 68.

[2]Cormac Brady, Senior Mechanical Engineer, San Francisco Department of Public Works, February 1977, telephone communication.

[3]Environmental Protection Element of the Comprehensive Plan of San Francisco, San Francisco Department of City Planning, 19 September 1974.

in noise due to traffic generated by the project would not be noticeable. The future noise environment would be essentially the same as the present.

Noise increases along Sansome Street, Battery Street, and the Embarcadero due to traffic increases with and without the project in 1982 are shown in Table 13. The increases were calculated by Charles M. Salter Associates Inc., Consultants in Acoustics. These streets are the major noise generators in the project area. The table shows the anticipated increase (over 1977 levels) in the peak hour L_{10} and the L_{dn} and is applicable to distances up to 200 feet from the street. At distances greater than this, noise from more distant sources dominates the noise environment and the influence of increased traffic on the overall noise level would be difficult to distinguish.

TABLE 13

Noise Level Increases in 1982
With and Without the Project

	Without project		With project	
Street	Increase in peak-hour L_{10}	Increase in L_{dn}	Increase in peak-hour L_{10}	Increase in L_{dn}
Sansome	less than 1 dBA	less than 1 dBA	1 dBA	1 dBA
Battery	less than 1 dBA	less than 1 dBA	1 dBA	1 dBA
Embarcadero	less than 1 dBA	less than 1 dBA	less than 1 dBA	less than 1 dBA

The traffic noise impact on the existing residences on Telegraph Hill and at the Telegraph Landing apartments would be less than 1 dBA. A change in noise level of 1 dBA is not perceptible, except in controlled laboratory situations.

b. Mechanical Equipment Noise

Mechanical equipment would be located on the roofs of the buildings proposed. These units could be noisy, depending on which units are chosen and how they are enclosed. The San Francisco Noise Ordinance requires that noise from this type of equipment, when measured at the property line of the affected property, cannot exceed 60 dBA in the C-2 zoning district between the hours of 10 p.m. and 7 a.m. The units on the proposed buildings would be designed to emit no more noise than is allowed by the ordinance.

3. Compatibility of Proposed Land Uses with the Future Noise Environment

Criteria. Criteria applicable to the compatibility of the land uses proposed by the project with post-construction noise levels are:

- Noise environment goals of the Environmental Protection Element of the Comprehensive Plan of San Francisco (Table 14, page 132).

- California noise insulation standards for multi-family housing.[1] The applicable portion of these standards requires that the interior noise level of a multi-family dwelling due to exterior noise sources not exceed 45 CNEL.[2]

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[1]Title 25, Chapter 1, Subchapter 1, Article 4, California Administrative Code.

[2]The Community Noise Equivalent Level (CNEL) is also used to describe community noise. The CNEL is similar to the L_{dn} with the addition of penalizing the evening hours (7 p.m.-10 p.m.) noise levels.

TABLE 14

Land Use Compatibility for Community Noise

Land Use Category	Sound Levels and Land Use Consequences (see explanation next page) L_{dn} Values in Decibels 55 60 65 70 75 80 85
Residential -- all dwellings, group quarters, orphanages, mobile homes	A B C
Transient lodging -- hotels, motels	A B C
School classrooms, libraries, churches, hospitals, nursing homes, etc.	A B D
Auditoriums, concert halls, amphitheaters, music shells	B D
Sports arenas (outdoor spectator sports)	B D
Playgrounds, neighborhood parks	A C D
Golf courses, riding stables, water-based recreation areas, cemeteries	A C D
Office buildings; personal, business and professional services	A B C
Commercial -- retail, movie theaters, restaurants	A B C
Commercial -- wholesale and some retail, industrial/manufacturing, transportation, communications, and utilities	A B C
Manufacturing -- noise-sensitive; communications -- noise-sensitive	A B C

Source: Environmental Protection Element of the Comprehensive Plan of San Francisco, San Francisco Department of City Planning, 19 September 1974.

TABLE 14
(Continued)

Explanation of Land Use Consequences

A = Satisfactory, with no special noise insulation requirements.

B = New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.

C = New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

D = New construction or development should generally not be undertaken.

Blocks A, B, C, and E. Office buildings are considered to be a satisfactory land use in a noise environment of up to an L_{dn} of 70 dBA, with no special noise insulation requirements (see Table 14). The noise exposure along Sansome and Battery Streets at the proposed building facades of Blocks A, B, C, and E would be an L_{dn} of 65-66 dBA. The noise exposure of the facade of the building on Block C fronting on Front Street would be an L_{dn} of 64-65 dBA. The office buildings would therefore be compatible with San Francisco's goals.

Block D. Parks are considered to be satisfactory in a noise environment of up to an L_{dn} of 70 dBA. Block D is exposed to noise from The Embarcadero and Battery Street. The combined noise from these streets would not exceed an L_{dn} of 70 dBA in the proposed park.

Block F. Block F would have commercial shops facing Sansome Street at street level, and condominium units along Lombard Street. The shops along Sansome Street would be about 35 feet from the center line of the near traffic lane. The L_{dn} at these shops would be 65-66 dBA as compared to the goal of a satisfactory maximum of L_{dn} of 70 dBA. The L_{dn} at the condominium units along Lombard Street would be lower than along Sansome Street. The dwelling units would be exposed to an L_{dn} of 62-63 dBA. The goal for residential dwellings in San Francisco is an L_{dn} of 60 dBA with no insulation requirements. For an exposure of 60-65 L_{dn}, the goals state that "new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design." The California noise insulation standards

also require such measures for multi-family dwellings located in a noise environment of greater than 60 CNEL.[1] A report must detail the method by which the exterior noise would be reduced to 45 CNEL inside the building. When these requirements have been met, the units would be compatible with the requirements of the state law.

Block G. Noise exposure on Block G is estimated at L_{dn} 55-60 dBA and should present no design problems for the proposed condominiums.

F. FLORA AND FAUNA

Construction of the proposed parking garage would necessitate draining the ponded area in the southwest corner of Block F, thereby eliminating a habitat for existing wildlife. The proposed park in Block D would increase the vegetation and open space in the project area over the present conditions, as would the rooftop garden in Block F, providing habitat for urban birds and insects as well as soil organisms.

G. LAND USE

Upon completion of construction, Blocks A through G would contain the various elements and land uses described in Section I, Project Description. Some buildings have already been cleared from the site. Demolition of the remaining structures (excluding the Italian Swiss Colony Building and the Cargo West Building) would require the relocation or discontinuance of 3 businesses employing 15 individuals. Employees would either remain with their present employers

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[1]For environments dominated by traffic noise, the L_{dn} and CNEL are within 1 dBA of each other.

in new locations, or seek employment with other firms. The Plan for the Northeastern Waterfront states that "every effort should be made to preserve the Italian Swiss Colony Building . . ."

The proposed project would establish a variety of land uses within the Telegraph Hill/Waterfront Area, including housing, shops, parking, open space, and office space. The land use objectives of the San Francisco Plan for the Northeastern Waterfront (see Section II, Relationship to Plans) state that a mixture of land uses is desired.

The garage and condominiums would be constructed on Blocks F and G adjacent to the existing Telegraph Landing residential complex. The proposed office spaces on Blocks A, B, and C would be located near the Ice House, which fronts on Union and Sansome Streets, and from which extends a concentration of office buildings south of Union Street. The open space on Block D would serve as an extension to the improvements proposed by San Francisco for a pedestrian right-of-way along The Embarcadero. The condominiums would be in conformity with Master Plan policy to encourage residential uses at the base of Telegraph Hill.

As a result of the expected increase in residents and individuals employed in the area, an increased demand for commercial and retail enterprises serving the project area may be generated. Additionally, there would be increased opportunities for office employment. Resulting increases in economic activities would lead to higher property values and might engender speculative activity and new pressures for land development.

The new office spaces in the proposed project could slow the demand for office space elsewhere in the area until there is a minimal vacancy rate in the project. At present, approximately 60% of the office space to be constructed would initially be available to tenants other than Levi Strauss Company. Should tenants in nearby, older office buildings desire to relocate to the proposed project, a higher vacancy rate in other buildings could result.

Land uses proposed for the project site conform to those allowed by the C-2 district designations of the San Francisco Planning Code. The 84-foot high, 7-story building on Block A would exceed the bulk permitted. Above 65 feet in height, the building would measure 230 feet in length on the side facing Sansome Street, and 310 feet diagonally on the roof, where the Planning Code permits 110-foot length and 140-foot diagonal above 65 feet, and would therefore require the approval of the City Planning Commission as a Conditional Use. Granting of such a Conditional Use would require a finding that the criteria of Section 271 of the City Planning Code had been met.

All other proposed buildings would conform to the height limitations specified by the City Planning Code.

H. URBAN DESIGN

This section examines how the proposed project would affect the physical form and use relationship of the environment in which it would be constructed. Internal environments created by the project itself are also considered.

1. Blocks A, B, C, and D

Most of the proposed project's office space would be constructed on Blocks A, B, and C. A landscaped park and plaza

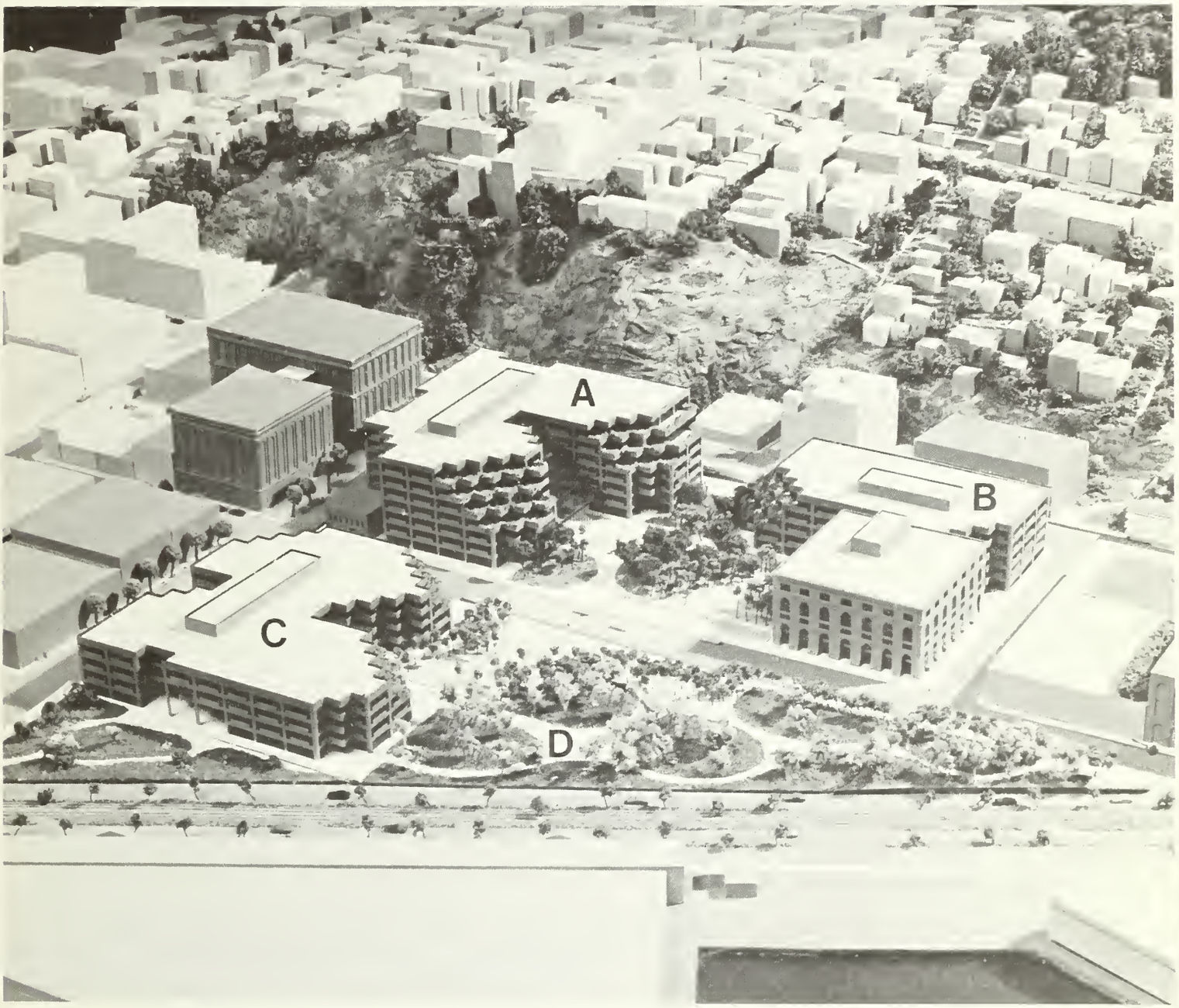
proposed for Block D would provide paths and spaces for strolling, sitting, and other outdoor activities (see Figure 33, page 139).

The park would function as a transitional outdoor setting to the more formal plaza, around which the main pedestrian entries to the office buildings would be oriented.

Building A, at the corner of Union and Battery Streets, would be constructed around the single-story Cargo West Building. The atrium in the center of Building A, would extend from ground level to the top of the seven-story structure, as a single interior space, and would provide the final transition from out-of-doors to the internal complex of office spaces surrounding it. A walkway on each of the upper levels on the south side of the atrium would serve to join the east and west interior portions of the building while affording views to interior and outdoor areas.

Comprised of five floors, Building B would be located on the west side of the existing Italian Swiss Colony Building. A common roof and pedestrian walkways would be constructed on the upper floors that would provide views to the main entry and lobby below (see Figure 10, page 24).

The lobby of Building C would enclose a space extending up to the floor of the third level. There would be no lobby space on the third and fourth floors. To a degree, the physical form of the buildings proposed for Blocks A, B, and C, would reflect the sloping character of Telegraph Hill as upper floor levels would be progressively stepped inward from the face of the buildings. Building A, which is the tallest structure, would be closest to the hill, and the east and north building facades would step up toward it. This appearance would vary depending on where the observer was standing, and in general would reduce the apparent height and mass of the buildings.



Model: A, B, C and D Blocks

Figure No. 33

The closing of Filbert Street, subject to City approval, would provide land for the proposed construction of park and plaza open-air spaces. As proposed, this would avoid east-west automobile traffic bisecting Blocks A-B and C-D. This closure would be subject to Master Plan referral before the City Planning Commission before approval by the Board of Supervisors.

The primary division between Blocks A and B and Blocks C and D would be Battery Street, which would disrupt freedom of pedestrian movement between the plaza areas adjacent to the main building entries on Blocks A and B and the park area on Block D. For pedestrian safety, the architects have planned a central crosswalk on Battery Street to connect entry plazas with the proposed park.

2. Blocks E and F

The four-story structure to house computer support and research functions on Block E would occupy about one-half of the block along the base of Telegraph Hill. The three-story above-grade garage structure proposed for Block F would provide parking for the public and serve as the structural base or podium for about 186 condominium units.

Automobile entry to the garage near the corner of Montgomery and Lombard Streets, and off the extension of Greenwich west of Sansome Street, would be identified for the motorist. The two buildings containing the condominium dwellings would rise above the third level of the garage. As shown in Figure 15, page 31, the structure located adjacent to Sansome Street would rise four levels and the larger structure facing Lombard Street would rise nine levels. The lower building would roughly assume the shape of a W, serving to break up the perceived horizontal extent of the building mass. The taller building would be located directly opposite the tallest and

the most massive building at Telegraph Landing fronting Lombard Street. The effect would be to maintain the relative congruity in building mass between the two projects.

3. Block G

On Block G, across Montgomery Street from Telegraph Landing, a structure containing approximately 125 to 150 condominiums would be constructed.

The extent of development that Block G is able to absorb is restricted due to the steep slopes of Telegraph Hill surrounding the Block. The proposed nine-story structure would front on Montgomery Street, with parking for owners provided within the building and accessible from Montgomery Street (see Figure 21, page 35).

I. VISUAL QUALITY

The visual characteristics of the proposed project would be derived from its physical layout; the size, shape and height of the buildings that comprise the project; the construction materials used and landscape development.

Because the project area is flat and now relatively open to view from The Embarcadero and Telegraph Hill, the proposed project would be an important element in defining the visual character of the Northern Waterfront Area. Principal areas of concern relative to the visual impact of the project discussed in this sub-section include the potential for blocking views of San Francisco Bay from Telegraph Hill, architectural compatibility of the proposed buildings with existing buildings surrounding the project area, roofs, and area lighting visible to the residents of Telegraph Hill.

1. Construction and Materials

As a result of the proposed project, the older structures on the site would be demolished, excluding the Italian Swiss Colony and the Cargo West buildings, which would be renovated and incorporated into the project. New buildings would replace the old and areas where parking lots and vacant land now exist would be covered.

Many existing buildings near the project area are constructed of red brick (see Section III. J.), and brick is one of the materials that is under consideration for cladding the exterior of the office buildings on Blocks A, B, and C. Exterior walls on the Block E, F, and G structures would likely be covered with cement plaster. Building entrances and store fronts would contain grey glass set in bronze or black anodized aluminum frames. The vertical surface of the atrium in the Block A office building would be clear glass.

Roof tops would be surfaced with colored gravels, with the exception of the parking garage roof on Block F which would be landscaped with trees, shrubs, walkways, and sitting areas. As a roof garden, it would be seen from Telegraph Hill and the Telegraph Landing condominiums directly opposite on Lombard Street. All rooftop housings for mechanical equipment would be covered with cement plaster and painted in a color similar to the color of the facing of the buildings. Exposed mechanical equipment would be painted to blend with the roof gravel or adjacent wall surfaces.

The park proposed for Block D would be the principal open green space in the vicinity of the base of Telegraph Hill.

Public walkways throughout the park and other locations in the project area would be electrically illuminated in order to provide a safe nighttime environment.

2. Views

There would be few views of San Francisco Bay, Treasure Island, the Oakland Bay Bridge, and other landmarks from ground-level locations within the project area. The bulk and height of warehouses along The Embarcadero block views of the Bay except for open areas between piers. Views over the warehouses and buildings surrounding the project area can be attained from Telegraph Hill; the higher on the hill one progresses, the more expansive the field of vision becomes.

Sectional drawings through the project area and Telegraph Hill have been constructed to illustrate the impacts on views to be expected as a result of the proposed project (see Figure 37, page 147). Observer Point One (photo, Figure 35, page 145), faces directly east from the lower end of Alta Street. The sectional drawing through Alta Street and Blocks A and C shows that views of the Bay for residents above Alta Street would not be obstructed.[1] The buildings, their roofs, and the proposed park would be within the field of view from Telegraph Hill. The buildings would not establish corridors guiding lines of sight from the Hill toward the Bay.

The four-story Walters Company Private Warehouse is located opposite Block B at the corner of Filbert and Sansome Streets. The structure is estimated to be about 50 feet in height, on top of which would be a two-story penthouse. Because the five-story office building proposed for Block B would rise to 65 feet above Sansome Street, upper reaches of the building may obstruct views eastward to the Bay from lower portions of the penthouse structure opposite.

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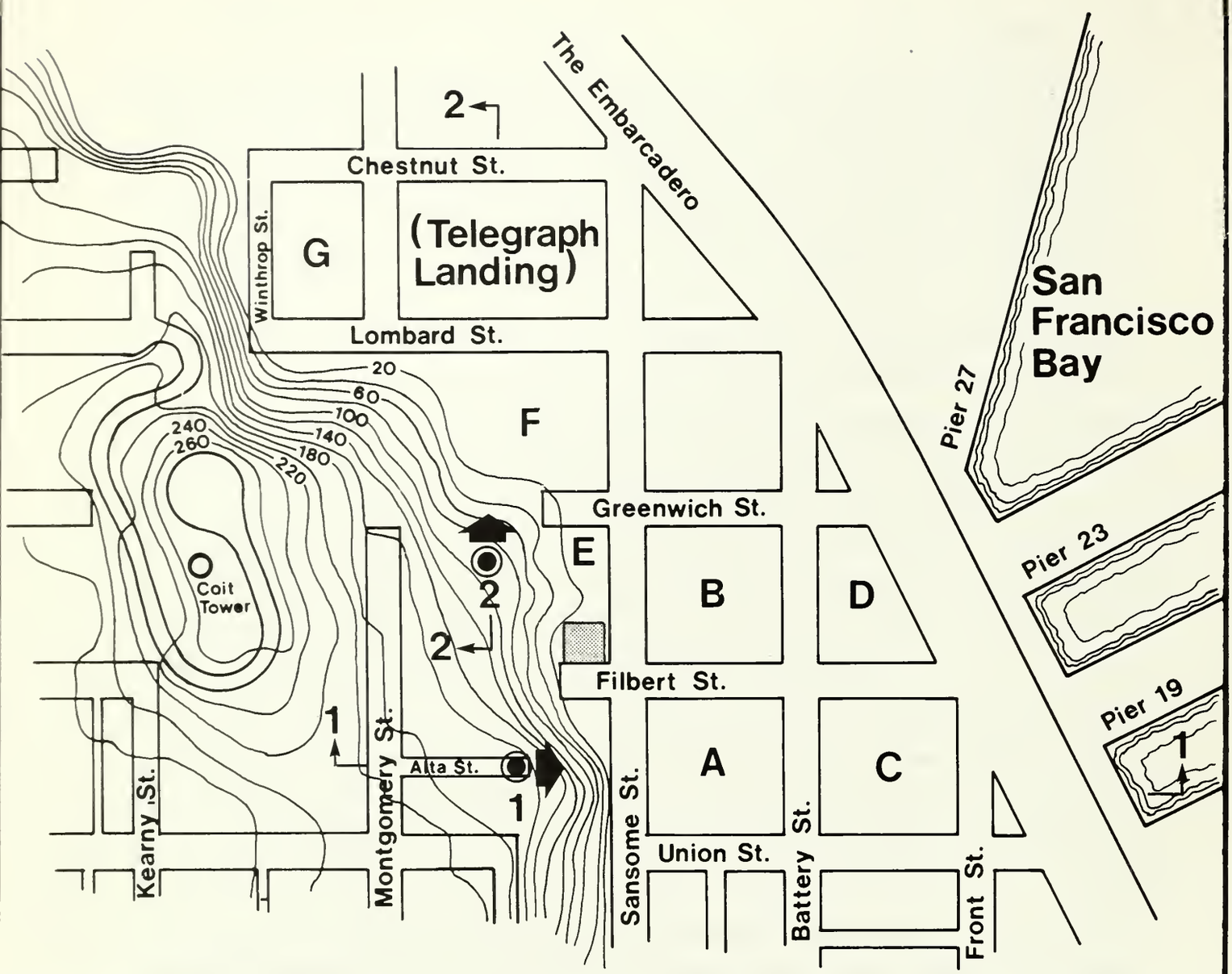
[1]There are no homes on Telegraph Hill east of and at a lower elevation than the 175 foot observer height shown opposite Block A.



Note: ▭ Walters Co. Warehouse

Observer Point Locations, (◉)

(with site sections shown – see Figure 33)

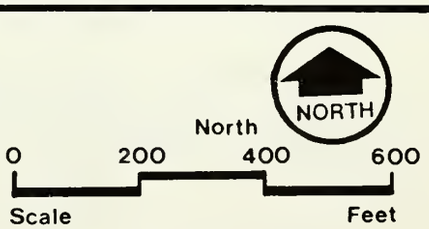


Figure No.34

View From Observer Point 1

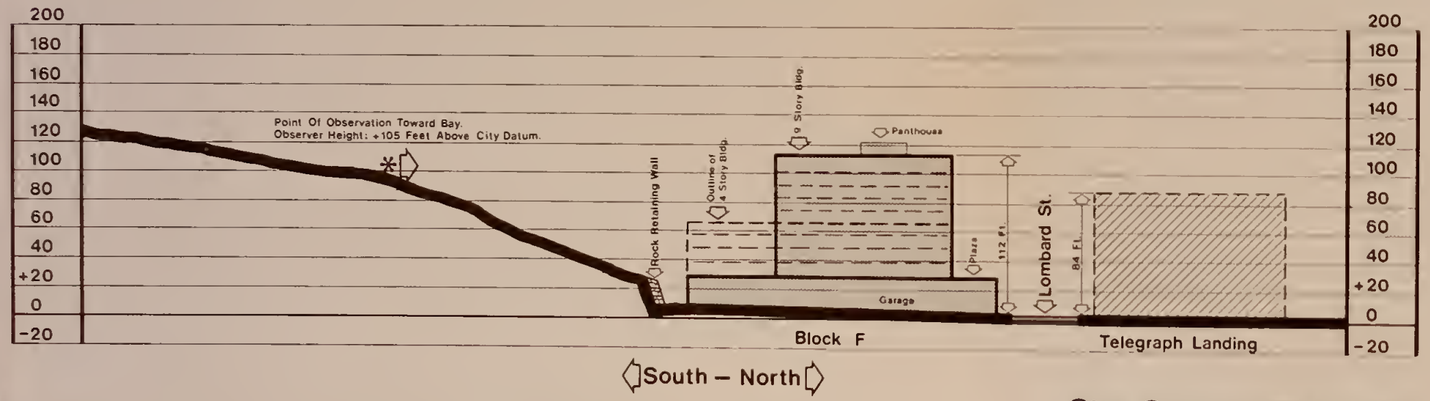
(See Figure 34 for location; Gibraltar Warehouse in foreground.)

Figure No.35

View From Observer Point 2
(see Figure 34 for location; Telegraph Landing in middleground)

Figure No. 36

Site Section Through
Observer Point 1
(Alta Street)



Site Section Through
Observer Point 2

Site Sections

(See Figure 34 for Observer Point Locations)

Figure No. 37

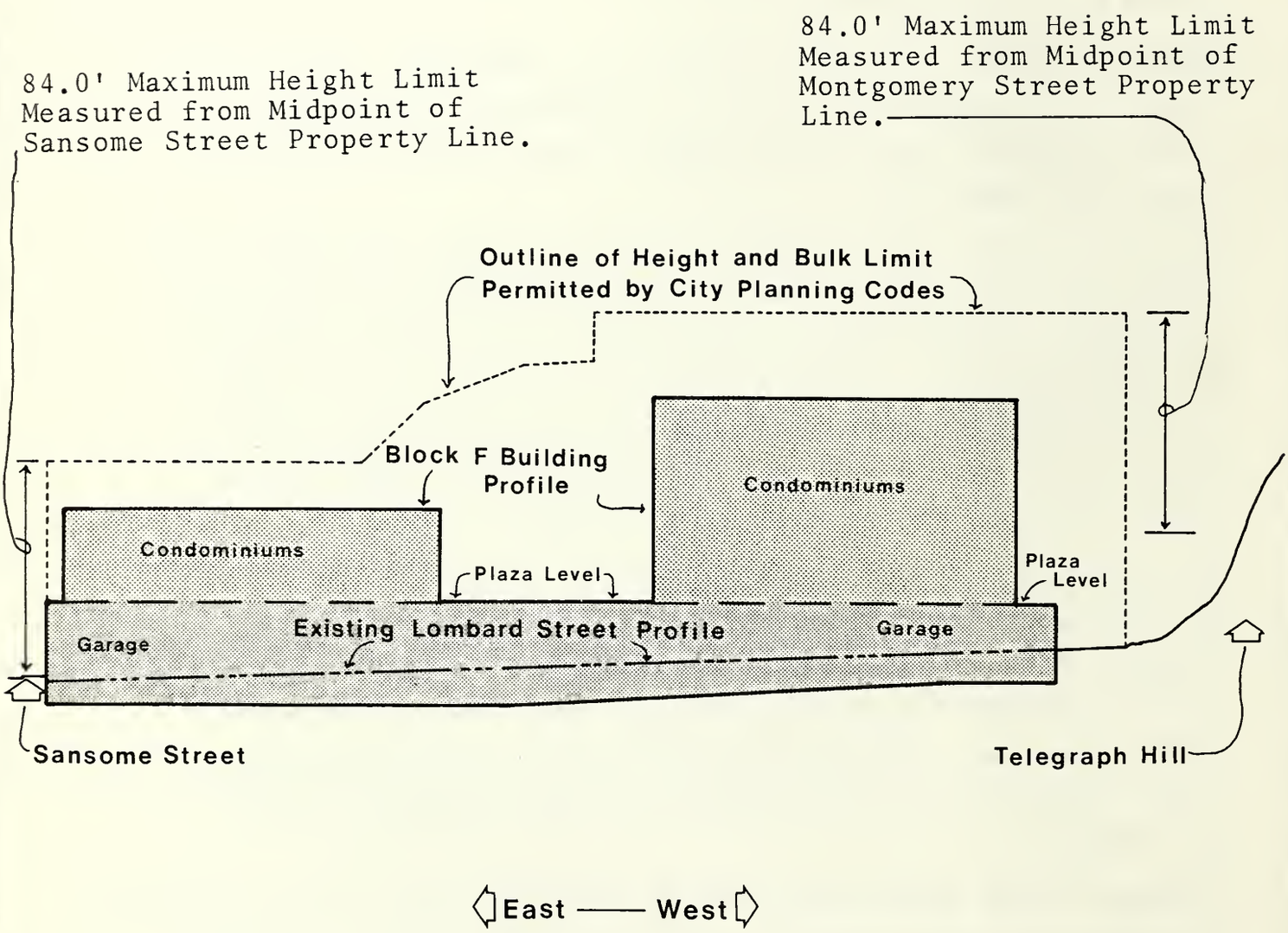
One residence to the northwest of the Walters Warehouse is situated behind the four-story building proposed for Block E. The Block E building's 50-foot height would partially obstruct views eastward from lower levels of the residence. Other residences on Telegraph Hill behind the Walters Warehouse are situated at higher elevations than the Warehouse and view blockage toward the Bay due to construction on Blocks B and E is not expected.

Observer Point Two (photo, Figure 36, page 146) faces north toward the condominium structures proposed for Block F. The structure's maximum allowable height limit is shown in Figure 38, page 150.

Review of Site Section Through Observer Point Two shows that some view obstruction toward Telegraph Landing and portions of the Bay beyond may be expected from the lower elevations of Telegraph Hill. The Site Section is constructed from a fixed location above and south of the Greenwich pathway. View obstruction toward the north would vary depending on one's location on the Hill with respect to Block F.

The proposed condominium structure would occupy the field of view south from Telegraph Landing residences fronting Lombard Street. If commercial shops and residential units are built into the parking garage, they would tend to disguise the basic function of the garage because the long, blank facades characteristic of parking structures would be avoided.

Distant views from structures of Telegraph Hill in the vicinity of Winthrop Street would not be obstructed by the condominium structure proposed for Block G. The building's 84-foot height would be below the approximately 100-foot base elevation of The Hill.



Profile Through Center of Block F Showing Height and Bulk Limits

0 30 60 120
Scale Feet

Figure No.38

J. HISTORICAL AND ARCHAEOLOGICAL RESOURCES

1. Historic Buildings

The potential impact of the Levi's Plaza development on buildings that may constitute a historical resource appears in this study and in previous deliberations of the San Francisco Landmarks Preservation Advisory Board. Impacts appear to be confined to the Italian Swiss Colony Building (1903), the extant wall of the Pioneer Warehouse (1852), the Cargo West Building (1906), the Vorpal Galleries Building (1906), and the Sperry-Abbott Building (1915). Of these, the Italian Swiss Colony Building and Cargo West Building are to be retained in the project development and restored to their approximate original exterior appearance.

The south wall of the Pioneer Warehouse Wall is to be relocated in the project. Because of its unusual construction (fragmented rock from Telegraph Hill) and surface texture, it would be difficult to recreate the original appearance when the wall is reconstructed.

The Vorpal Galleries Building and Sperry-Abbott Building are structures of somewhat lesser historical value than the other buildings. The Vorpal Galleries Building is in poorer condition than the contemporary Cargo West Building, and the Sperry-Abbott Building is of more recent date. These two structures are scheduled for demolition in the proposed project. The San Francisco Landmarks Preservation Advisory Board has taken the position that the benefits of the project as a whole - including restoration of the presently dilapidated and partially architecturally despoiled Italian Swiss Colony Building (see Plates 19 and 20 in Appendix B) and the preservation of the Cargo West Building - could represent an acceptable compromise between the preservation of

historical resources and the needs of the Levi's Plaza development. The judgment of the Landmarks Preservation Advisory Board and the consensus of a public hearing on 2 November 1977 was to consider demolition of the Vorpal Galleries and the Sperry-Abbot Building acceptable under the circumstances. Preliminary studies on these two buildings have been made by the Landmarks Board.

2. Archaeological Resources

The impact of the project on any existing subsurface cultural resources varies according to the relationship between the type of construction on specific blocks and the type of remains that may underlie these sites.

Block A (bounded by Sansome, Filbert, Battery and Union streets)

With the exception of a rectangular plaza area extending approximately 155 feet along Filbert Street and 75 feet along Battery Street, Block A would be excavated for a basement parking garage.

1. Gold Rush hulks. It is probable that vessel #6 on Figure 32, page 85, exists. From archival analysis, the likely location is entirely under Battery and Filbert streets, or slightly northward of this position, and partially under Block B. However, the sources can be interpreted so as to place the vessel under the portion of Griffing's Wharf directly in front of Griffing's Warehouse, a wharf so narrow that the vessel would necessarily lie partially under the warehouse. Thus, it is possible (although not likely) that construction may have an impact on this vessel.

2. Other cultural materials. Masonry from the original Union Warehouse structure (1852), which burned in 1906, together with other earthquake and fire debris, may be encountered and removed from the structure site during excavation. Rubble from the Pioneer Warehouse (Griffing's),

which dates from 1851 to 1954, also may be present immediately below present-grade level. This building material would be removed during excavation. Nineteenth-century artifacts associated with the storage in or operations of these warehouses are not likely to be encountered.

3. Artifacts deposited on the natural site. Any prehistoric, Spanish-Mexican, or early-American period artifacts deposited on or slightly below the original surface, before fill was placed in 1851-1852, may appear approximately along the line of the original shoreline (see Figure 32, page 85). The original grade was reduced west of this line (10-25 feet); a few feet east of this line, the proposed excavation would not be sufficiently deep to reach the original ground level. Cultural debris from these periods is not expected. The western half of the block was reduced to present grade after 1886, and there is no evidence that any subsequent conditions may have created deposits of cultural materials.

Block B (bounded by Sansome, Greenwich, Battery, and Filbert streets)

The eastern half of this block would be occupied by an open plaza and the Italian Swiss Colony Building. There would be no impact upon hulks or other identifiable subsurface archaeological resources underlying this half of the block unless features of the park would require excavation to a depth of more than 4 to 5 feet.

The western half of the block would be occupied by a new building. Foundations for this structure may have an impact on the hulk of the Palmyra, if it lies near the alternate location shown on Figure 32, page 85. It is unlikely that this vessel is under or partially under the projected building, but if it is, the vessel could be destroyed by excavation.

Impact of the building's foundations on other potential subsurface cultural remains would be limited in area.

Remains of wharves built in the 1850s, 1860s and early 1870s would almost certainly be encountered by foundations of buildings projected for Blocks B and C. Wharves, such as the famous Long Wharf across Mission Bay and the Pacific Mail Dock, have been encountered by the current Channel Outfalls Consolidation Project, and have at times impeded construction. From the historical archaeological standpoint, the nature of the remains has not proved of interest to historical archaeologists or maritime historians.

Block C (bounded by Battery, Filbert, Front, and Union streets)

Most of Block C would be covered by new construction, with the exception of a plaza approximately 60 feet wide along Battery Street and approximately 150 feet long along Filbert Street, and two large, irregular entrance areas (see Figure 3, page 17). The new building would be constructed on pilings, which (as noted above) would have a damaging impact if a hulk were found, but a low impact on any general cultural resource of randomly scattered remains.

It is possible, but not likely, that a hulk exists along the line of the east wall of Cowell's Warehouse, and partly or wholly underneath the location of the warehouse, as dotted alternate location of vessel #1, Figure 32, page 85.

Photographic evidence from the 1860s precludes the existence of a hulk in the more easterly position occupied by the Dalmatia (#1) in 1852. The same evidence precludes any hulk remaining in the position of the Dryade of 1852 (#3), but does not entirely preclude the possibility of a hulk lying mostly under Battery Street and partly under Block C, in approximately the position of vessel #2.

There is no direct archival evidence that storeships were ever built over in the two possible areas of impact on Block C identified above.

Block D (bounded by Battery, Greenwich, the Embarcadero, and Filbert streets)

All of the Block D is proposed to be developed as a landscaped pedestrian plaza. No impact on potential subsurface cultural materials would be expected unless some feature is introduced into the plans requiring excavation to a depth of 4 feet or more.

Block E (northeastern corner of the block bounded by Montgomery, Greenwich, Sansome, and Filbert streets)

This parcel was formed by quarrying activities in the late 19th or early 20th century, causing removal of cultural materials associated with the Gold Rush period and even later structures. A possible exception is the corner lot at Greenwich and Sansome. This site appears to have been somewhat above present grade in 1857 and 1864 views, but materials introduced below grade at that time (in a garbage pit) could be encountered.

Block F (bounded by Montgomery, Lombard, Sansome, and Greenwich)

With the exception of an area approximately 50 feet wide along Sansome Street and extending west along Greenwich to the abrupt base of Telegraph Hill, and the irregular hill area on the southwestern portion of the block, Block F would be covered by a new structure. The parking garage serving as the lowest and largest area of the new building in section and plan view would include one subsurface parking level, involving excavation to a depth of eight feet or more.

There is a geographical possibility that the Gold Rush storeship LeBaron lies approximately in the position identified

on #9 on Figure 32, page 85, and its remains might be encountered during excavation. However, the probability that the hulk lies on Block F is low. The basalt stone work associated with the Gold Rush warehouses, Scott's Bay, or Lombard, may be encountered. The western portion of the excavation would be in an area formerly occupied by the slope of Telegraph Hill, and cut down through rock to its present grade by quarry operations. The Sansome Street frontage, to the depth of the Gold Rush period warehouses that occupied the site (see Figure 31 and Map I in Appendix B), appears to have been partially below present grade when constructed, and two of these structures had basements. Thus, there is a likelihood of encountering historical cultural remains from the Gold Rush period and later dates on the eastern side of the block on or between the old building sites.

Block G (bounded by Winthrop, Chestnut, Montgomery and Lombard streets)

The present level of Block G is the result of the Westmore quarrying activities, about the turn-of-the-century, and is mostly far below earlier grade. Building plans for Block G involve excavation for a garage to a point 6.28 feet below city grade, and fill materials in any comparatively recent (20th century) basements may contain scattered cultural debris.

Nineteenth-century or earlier remains are not expected to be found, with the possible exception of the corner lot at Chestnut and Montgomery. Here, archaeological possibilities are comparable to those at the corner of Sansome and Greenwich on Block E.

K. ECONOMICS

1. Construction

Table 15 shows the construction costs of the project by block. An estimated $56.9 million would be spent on construction. Assuming about 50% of construction cost would go into labor, including direct wages, payroll taxes, and fringe benefits, $28.5 million would be paid in construction salaries. At a total hourly wage rate of $18 an hour, this would represent about 1,580,000 person-hours, or 790 person-years (at 2,000 work hours per person-year), of work generated.[1] Project construction would last about 3.2 years and employ an average of 247 individuals.

Based on a total of approximately 671,000 square feet of net occupiable office space on Blocks A, B, C, and E, about 3,200 jobs would be accommodated (see Table 16, page 159). Development of about 28,000 square feet of commercial and service shops would give rise to about 60 jobs, at one employee per 500 square feet.[2] An estimated 50 maintenance jobs are expected to be created by the project. The total employment would therefore approximate 3,310, as shown in Table 16.

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[1]Personal communication, Don Wyler, Gerson Bakar & Associates, 20 September 1977.

[2]Baxter, McDonald & Smart, Socioeconomic Impacts of Environmental Impacts, October 1973.

TABLE 15

Estimated Cost of Construction
by Block

Location	Superstructure & site development	Atrium	Total
Block A			
1-New building	$14,370,000	$330,000	$14,700,000
2-Cargo West renovation	50,000		50,000
Block B			
1-New building	5,570,000		5,570,000
2-Italian Swiss renovation	1,750,000		1,750,000
Block C			
New building	8,800,000		8,800,000
Block E	2,500,000		2,500,000
Block F			
1-Podium	4,200,000		4,200,000
2-Condominium	10,100,000		10,100,000
Block G			
1-Condominium	7,740,000		7,740,000
2-Garage	490,000		490,000
[1]Landscaping	1,000,000		1,000,000
Total	$56,570,000	$330,000	$56,900,000

[1]Includes development of Block D.

TABLE 16

Estimated Potential Employment by Block

Location	Estimated Number of Employees		
	Office	Retail[2]	Maintenance[3]
A Building	1,420[1]	20	
B Building	830[1]	20	
C Building	850[1]	10	
E Building	100[4]	--	
Block F	---	10	
Block G	---	--	
Entire Project[5]			50
TOTAL	3,200	60	50

[1]Allows one employee per 200 square feet of net occupiable floor area.

[2]Based on the ratio of one employee per 400 to 600 square feet of space. Floor space includes both sales and support spaces. (Baxter, McDonald & Smart, Inc., Socioeconomic Impacts of Environmental Impacts, October 1973.)

[3]Assumes one person per 20,000 sq. ft. of occupiable gross floor area.

[4]Assumes one person per 600 square feet of gross floor area, based on research and development functions of the building.

[5]Includes condominiums.

[6]Figures rounded to nearest ten.

2. Revenues (see also Appendix C)

Revenues generated by the Levi's Plaza Development (1978 tax rates) to the City and County of San Francisco would come from several sources:

Sales tax	1.0	percent of gross sales (State of California, Department of Taxes)
Employees' payroll tax	1.1	percent of employee payroll (San Francisco Tax Collector)
Parking tax	15.0	percent of net receipts (San Francisco Tax Collector)
Utilities tax	5.0	percent of utility costs (San Francisco Public Utilities Commission)
Property tax	-	Market value x 1 percent tax rate (San Francisco Assessor's Office)

TABLE 17

Estimated Annual Revenues

Sales tax	$ 16,400[1]
Employees' payroll tax	480,000
Parking tax	53,000
Utilities tax	79,200
Property tax	569,000
Personal property tax	270,200
Total annual revenue to the City and County	$ 1,467,800[2]

[1]Figures rounded to nearest hundred.

[2]Construction not included in total; all other figures are annual.

L. COMMUNITY SERVICES

1. Telephone Service

Pacific Telephone & Telegraph Company would serve the proposed Levi's Plaza project from its underground cables presently located in Battery Street to The Embarcadero, then up Lombard Street.[1] Installation connections could require some street excavation and associated repair.

2. Water Supply

Based on the proposed uses of each building and associated landscaping, the total project would consume an average of about 230,000 gallons of water per day, or 0.23 million gallons per day (mgd).

Installing or expanding connections for the site to the water main beneath The Embarcadero would require some street excavation and associated repair. The developer would pay for these operations, except for the costs of meters, which are included in the user's monthly bill.

3. Wastewater

The project would generate about 220,000 gallons per day (0.22 mgd) of wastewater, or 0.35% of the Northpoint Water Pollution Control Plant's current treatment load. Wastewater generated by the project would be less than 0.15% of the Northpoint Plant's capacity of 150 mgd.[2] This plant treats about 60% of the City's dry-weather wastewater. The

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[1] R. J. Teglia, District Manager, Engineering, Pacific Telephone and Telegraph Company, letter, 19 September 1977 (see Appendix E).

[2] A. E. Bagot, Superintendent, Southeast Water Pollution Control Plant, telephone conversation with T. A. Kaden, San Francisco Department of City Planning, 15 February 1978.

proposed Southeast Plant is scheduled for completion by mid-1980. Upon completion, it would treat dry-weather wastewater from the proposed project. Wastewater generated by the proposed project would represent 0.32% of the Southeast Plant's capacity of 70 mgd.[1]

4. Solid Wastes

Prior to construciton of the proposed project, several existing structures on site would require demolition and removal. Included are the six-story Gibraltar Warehouse, the one-story Battery Street Furniture Faire, the two-and-a-half-story concrete Abbott Laboratories (Sperry Flour) Building, two masonry warehouses, the brick Vorpal Gallery Building, the two-story Adcraft Sign Company, and the one-story Danish Furniture Import Building. Additionally, pavement from parking areas and the two blocks of Filbert Street to be closed would require removal. While the project sponsors have not as yet estimated the amount of debris to be generated by the project, it is anticipated that the majority of demolition material, including brick, lumber, concrete, and interior fixtures, would be salvaged and recycled.[2] The demolition debris requiring disposal, including pavement, would be removed from the project site and landfilled at some Bay Area location presently requiring heavy fill material.[3]

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[1]A. E. Bagot, Superintendent, Southeast Water Pollution Control Plant, telephone conversation with T. A. Kaden, San Francisco Department of City Planning, 15 February 1978.

[2]Chuck Duncan, Cleveland Wrecking Company, telephone conversation, 25 October 1977.

[3]Ibid.

The proposed project would generate approximately 6,450 pounds of solid waste per business day from commercial sources, or about 840 tons per year.[1] Residential solid waste generated from the proposed project would be approximately 2,150 pounds per day or about 390 tons per year.[2] The total solid waste generated from commercial and residential sources (1,240 tons) would represent 0.19 percent of the 633,000 tons of refuse landfilled annually in Mountain View.[3]

Solid wastes have a cumulative impact over a period of years since, unless they are incinerated, they remain physically present for some time after they are produced. Landfill sites within the Bay Area are becoming increasingly scarce. Following closing of the Mountain View landfill site in ten years, additional landfill area will be required unless other methods of dealing with solid wastes are adopted.

5. Fire Services

The San Francisco Fire Department has indicated that the proposed project would not require additional fire department personnel or rolling stock to provide fire protection services.[4]

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[1]California Solid Waste Management Board, Solid Waste Generation Factors in California, Technical Information Series Bulletin No. 2, 8 July 1974.

[2]Ibid.

[3]Association of Bay Area Governments, "Status of Existing Landfill Sites", undated.

[4]Chief Robert Rose, San Francisco Fire Department, Division of Planning and Research, personal interview, 19 October 1977.

Water supplies in the project site are expected to be sufficient to provide adequate fire protection services. Additional investigation by the fire department and further development of project plans would be required before the need for additional hydrants could be determined or an evaluation of the impact of the closing of Filbert Street on Fire Department equipment access could be made.[1]

7. Schools

While the demographic makeup for the proposed 325-350 residential units has not been determined, it is anticipated that few school-aged children would live within the project area.[2] There are approximately 25 children living within the 189 units of the Telegraph Landing Complex[3] located immediately adjacent to the proposed project and assumed to have a similar demographic profile. This would imply that about 45 children would live in the Levi's Plaza project and would not tax the capacity of the schools (see Section III.M.3, Schools, Page 94).

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[1]Letter from Chief Rose to Mary Jo Borak of EIP Corporation, 17 November 1977, available for public review in the Office of Environmental Review files at 45 Hyde Street.

[2]James Casassa, School Operations Division, San Francisco Unified School District, personal interview, 6 September 1977.

[3]Del Casebolt, Chairman of the Board, Telegraph Landing Homeowners Association, telephone conversation, 20 October 1977.

M. ENERGY

Detail design plans for the proposed project have not been developed to the level that energy calculations can be made based on the actual properties of the building materials that would be used for construction. The following analysis has been based on historical data from PG&E for similar building occupancies in the downtown San Francisco area. In analyzing the historical data, provisions were made for compliance with the Title 24 energy standards for Non-Residential Buildings.[1,2]

1. Electricity

Pacific Gas and Electric Company would supply electricity to the project through underground cables. The total connected kilowatt[3] load for the entire project is estimated to be 13,300. The project's estimated[4] average monthly electrical consumption would be 2,080,000 kilowatt hours (kwh) or 25,000,000 kwh per year. Consumption is expected to reach a maximum during the summer because of the air conditioning loads. See Figure 39, page 166, for estimated average daily and annual distribution curves.

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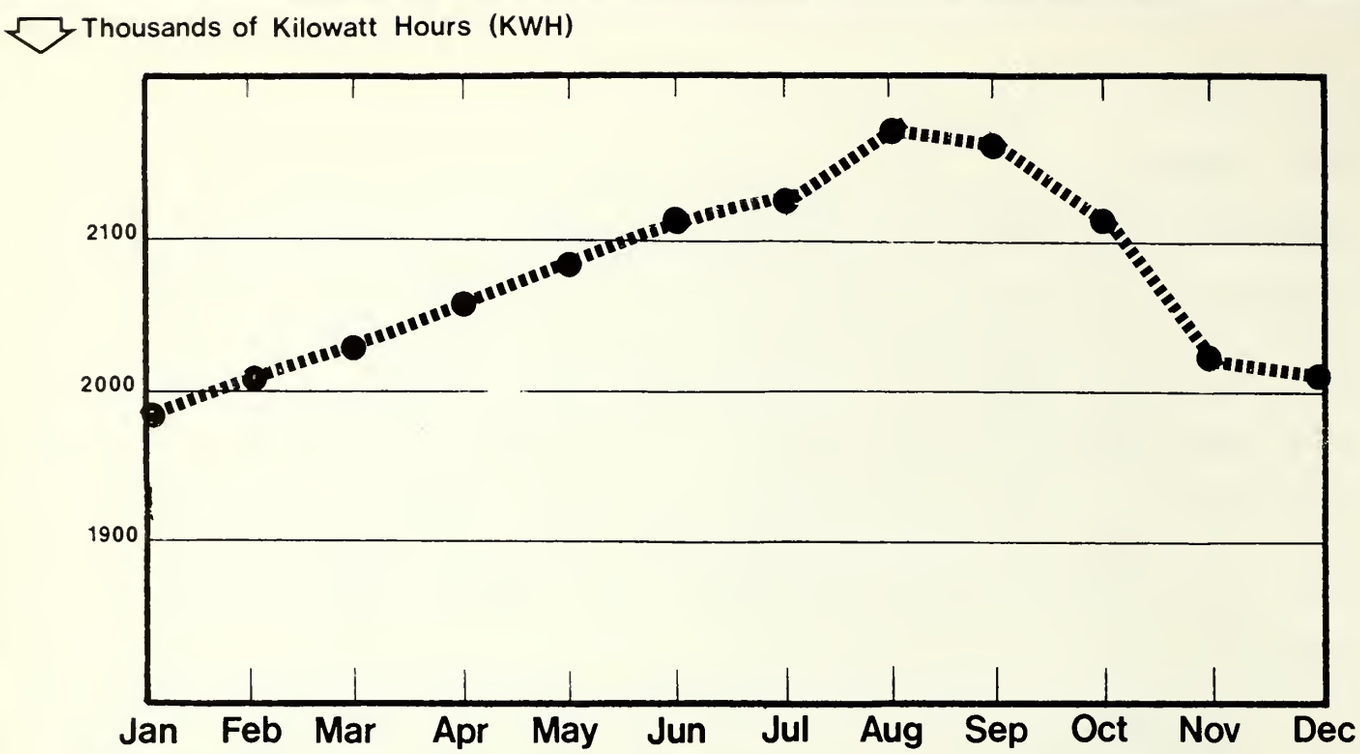
[1]Mr. Ray Gifford, engineer, Vann Engineering Corporation, telephone conversation, 19 September 1978.

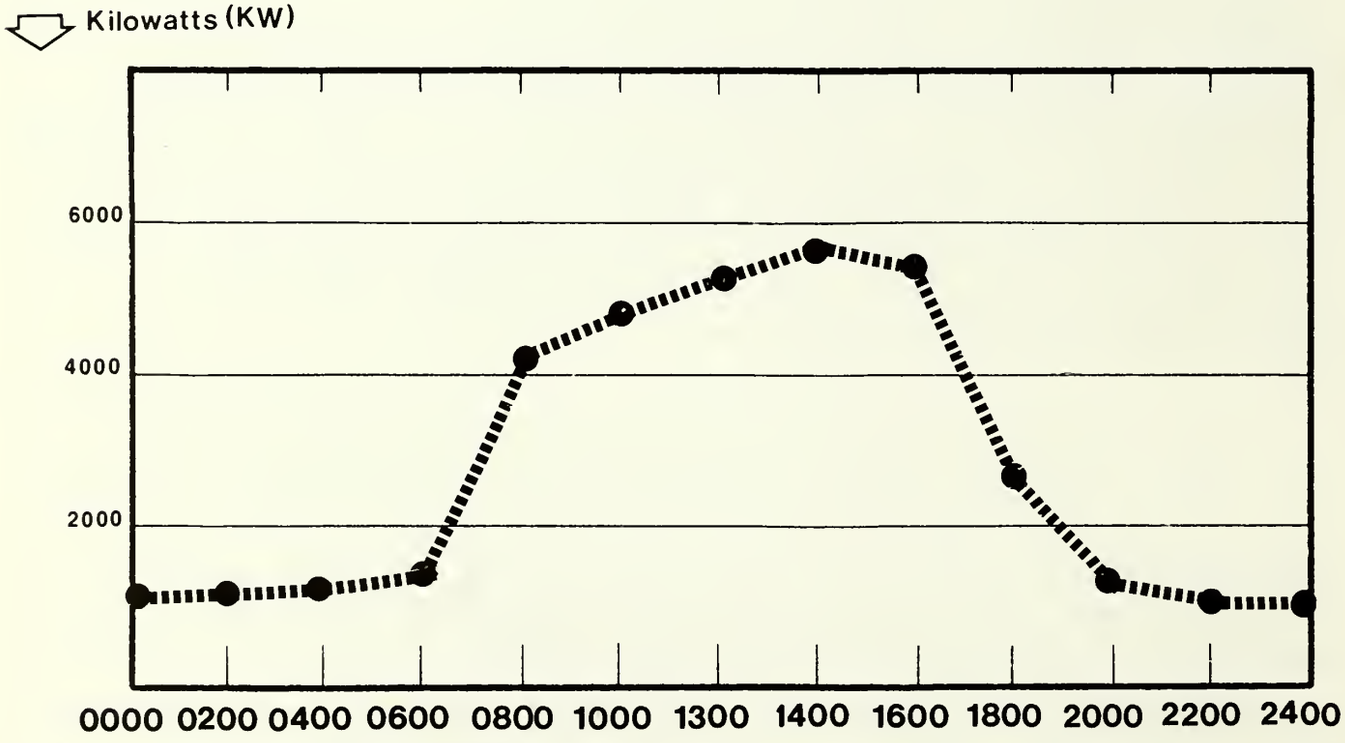
[2]California Energy Resources Conservation and Development Commission, Energy Conservation Standards for New Non-Residential Buildings.

[3]One Kilowatt = 1,000 watts.

[4]"Levi's Plaza, Electrical Input for EIR Statement", The Engineering Enterprise, October 1977, revised March 1978, available for public review at the Office of Environmental Review, 45 Hyde Street.



Monthly Consumption



Hourly Consumption

Estimated Electrical Consumption

Figure No.39

2. Fuel Oil

Because of the projected shortage of natural gas and the California Public Utilities Commission requirements limiting natural gas consumption to less than 50,000 cubic feet per day per hookup, fuel oil is likely to be selected as the primary source of heating energy for the project.[1] The estimated average consumption of fuel oil per day for the entire project[2] would be 109,000,000 Btu,[3] or 780 gallons (18.5 barrels). This is the equivalent of 39.8 billion Btu of fuel oil per year, or 6,800 barrels. Peak fossil fuel consumption would occur in January, when about 6.5 billion Btu of fuel oil would be consumed.

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[1] "Levi's Plaza, Fuel Consumption Input for EIR Statement", Vann Engineering Corporation, October 1977, revised March 1978, available for public review at the Office of Environmental Review.

[2] Fuel consumption to provide space heating, domestic hot water and, for condominium units, includes cooking.

[3] Btu: British thermal unit--the quantity of heat required to raise the temperature on one pound of water by one degree Fahrenheit at or near 39.2° F.

V. UNAVOIDABLE ADVERSE IMPACTS

A. GEOLOGY AND SEISMICITY

Seismic activity could cause damage to the proposed project. In the event of earthshaking, structures located on Blocks A, E, F, and G would be susceptible to rock and slide debris falling down Telegraph Hill. The City of San Francisco is currently investigating feasible mitigation measures to minimize the hazards from the unstable Telegraph Hill. The portions of the project constructed on Bay fill would be subject to liquefaction.

B. HYDROLOGY

There would be an increase of approximately 33% in the quantity of surface stormwater runoff. There would also be an increase in pollutants entering storm drains.

C. ATMOSPHERE

1. Air Quality

Construction activities would produce a temporary increase in dust generation, resulting in a periodic nuisance to downwind businesses and pedestrians.

In comparison to 1982 air quality conditions without the proposed project, project-related traffic would increase roadside concentrations of carbon monoxide on streets within the proposed site by 6-15% (see page 120) resulting concentrations would be less than 25% of present standards.

Pollutant emissions from project traffic and from fuel combustion would cause a degradation in regional air quality. While the increases in regional pollutants attributable to the project are relatively small (Table 12, page 123), reductions in regional emissions are necessary if the air quality standards are all to be attained in the Bay Area. The project would, therefore, delay attainment of the standards or make attainment more difficult.

2. Wind, Sun, and Shade

Wind speeds sufficiently high to cause discomfort would occur in the proposed park on Block D approximately 20% of the time during the summer months, 5-15% of the time during spring and fall, and less than 5% of the time in winter.

D. NOISE

During construction some disruption due to noise can be expected. The amount of impact would depend on the particular construction activity and its location in relation to residences or offices. Pile driving, grading, drilling, and associated construction activities would cause periodic maximum levels of about 70 dBA inside the nearest residences on Telegraph Hill and of 75 dBA inside the commercial buildings on Union Street. Outdoor increases of up to 20 dBA would be disruptive and would tend to induce avoidance of outside activity in the area.

E. VISUAL QUALITY

Upper levels of the Block B office building would partially obstruct views eastward toward the Bay from lower portions

of the penthouse structure directly opposite, across Sansome Street. The 50 foot height of the Block E building would partially obstruct views eastward from lower levels of the residential structure behind the Block E building.

Partial view obstruction north toward Telegraph Landing and portions of the Bay beyond would be expected from the lower elevations of Telegraph Hill due to the construction of the nine-story condominium on Block F, depending on one's location on the Hill with respect to Block F.

F. HISTORICAL AND ARCHAEOLOGICAL RESOURCES

1. Historic Structures

Development plans call for removal of the remaining wall of the Pioneer Warehouse (Griffing's Warehouse, 1852), and relocation to an open-space location in the Plaza on Block D. The rubble construction of this two-story wall may present considerable problems in its removal and re-erection to meet standards of historical curatorship.

Anything less than the most careful and knowledgeable work in the re-erection of this wall may result in not only loss of its historic quality, but a disappointing visual impression on tenants, and the general public.

2. Archaeological Resources

Adverse impacts of the project construction on any existing subsurface cultural resources would vary according to the relationship between the type of construction to be performed on specific blocks and the type of remains that may lie beneath the surface.

G. COMMUNITY SERVICES

Solid Wastes

Solid wastes remain present after they are produced unless they are incinerated. Landfill sites within the Bay Area are becoming scarce, and following closing of the Mountain View landfill site in ten years, additional landfill area will be required unless other methods of handling solid wastes are adopted.

H. ENERGY

The use by the project of some 39.8 billion Btu of fuel oil per year (approximately 6,800 barrels) is an unavoidable adverse impact, as fossil fuels are nonrenewable resources. Similarly, the 25 million kwh of electricity that would be consumed annually by the proposed project must also be considered an unavoidable adverse impact, as this electricity would be generated predominantly from fossil fuels.

I. TRANSPORTATION

1. Traffic

Sansome between Lombard and The Embarcadero would be at level of service E during peak hours.

Battery between Union and Broadway would be at level of service F during peak hours.

2. Parking

About 612 parking spaces (now serving mostly off-site uses) would be lost due to construction of the proposed project. These spaces would not be replaced, as the proposed project would provide only enough parking to satisfy its own demand.

The proposed parking supply would be 713 spaces short of the parking requirement of the San Francisco Planning Code.

3. Transit

There would be increased capital and operational costs of 16 additional buses during peak hours on lines 15, 42 and 32 or decreased transit service if funds were not available for these capital and operational costs.

VI. GROWTH-INDUCING IMPACTS

The major effect that the project would have on the City's population and employment is through its impact on economic activity in San Francisco, as discussed in Section IV.B.5. The Levi's Plaza development could induce growth in the economy by generating new employment, increasing consumer expenditures, and bringing new money into San Francisco.

The project would affect the city's population to the extent that it would make available more jobs to San Francisco residents; Bay Area population would be affected to the extent that jobs are provided to non-City residents. Of the 3,310 jobs that would be provided, about 43% would be held by City residents, and about 57% by non-residents.[1]

Table 18 summarizes the estimated direct and indirect annual income and job generation of the project; indirect effects are based on multipliers described in the following.

Direct employment and income effects of the project were indicated in Section IV.K.5. There would also be indirect employment impacts in the form of jobs generated by the income of the Levi's Plaza employees through the "multiplier effect." It is estimated that San Francisco residents employed by the project would purchase about 66 percent of their non-housing-related goods and services in the City, thus providing

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[1] Survey of Employees, Levi Strauss, October 1977. The growth would depend on how many of the expected 3,310 jobs accommodated by the project are existing jobs and how many are new. Of the 3,310 jobs, 1,420 will be transferred from the present Levi Strauss offices. It cannot be determined at this time how many of the remaining 1,890 jobs would be new jobs.

TABLE 18

Annual Income and Job Generation of Project
To San Francisco Employees

Place of residence	Annual direct jobs		Annual indirect jobs to San Francisco Employees		Annual indirect income to San Francisco Employees[2]	
	Existing[1]	New	Existing	New	Existing	New
San Francisco (43 percent)	610	813	366	488	$4,820,000	$6,430,000
Elsewhere (57 percent)	810	1077	105	140	1,380,000	1,850,000
Total San Francisco jobs and income	1420	1890	471	628	6,200,000	8,280,000

[1]Persons employed by Levi Strauss Company in San Francisco, who would be transferring to the new buildings.

[2]Based on an average salary in 1977 of $13,180 in San Francisco. California Employment Development Department, California Employment and Payroll, October-December 1976, Report 127, 27 May 1977.

additional jobs to San Francisco residents. The estimated "employment multiplier" of the jobs provided directly by the project is 0.6,[1] which means that for every 100 jobs the project provides to San Francisco residents, employment in the city would increase by 160, the additional 60 jobs being generated through the several rounds of economic activity initiated by the demand of the 100 project employees.

Non-San Francisco residents employed by the project would also have an indirect impact on employment within the City. The estimated employment multiplier associated with non-City residents would be 0.13.

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[1]San Francisco Department of City Planning, Economic Analysis, Final Environmental Impact Report, Bank of America Data Center, Vol. 1, San Francisco, 28 August 1975.

VII. MITIGATION MEASURES

A. GEOLOGY AND SEISMICITY

To mitigate the potential for loose gravel and boulders falling from Telegraph Hill onto the project area, a wall would be constructed by the project sponsor at the base of the Hill in the southwest corner of Block G. There is currently a wall along the south side of Block F which is a barrier to further downslope movement of rubble.

The project would be constructed in conformity with the San Francisco Building Code and would therefore incorporate the required seismic design elements for minimizing seismic hazards from groundshaking and liquefaction. The Italian Swiss Colony Building would be renovated to conform to the Building Code.

B. HYDROLOGY

The following control measures could be used to reduce surface runoff and runoff pollution.[1]

- Prevent contaminants from reaching ground surfaces.
  (1) Control littering and dogs through local ordinances (C); the City does not expect to be able to improve enforcement of these ordinances.

- Improve reduction of contaminants prior to rainstorm.
  (1) Increase street-cleaning (C); the City does not have funds to increase street-cleaning.

  (2) Clean catch basins frequently (C); the City does not have funds to increase current catch basin service levels.

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[1]Letters in parentheses indicate whether responsibility for implementation would fall on the developer (D) or the City (C).

(3) Prevent erosion at construction sites (D,C); use of good construction practices would be required by the developer and monitored by the City.

(4) Reseed or apply vegetation cover to distrubed areas (D); the developer would do this.

C. ATMOSPHERE

1. Air Quality

Construction impacts: Watering to control dust on the construction site would be provided by the project sponsor. The San Francisco Building Code requires that measures be taken to reduce dust generation, specifically, watering down demolition materials and soils. An effective watering program (complete coverage twice daily) can reduce emissions by about 50%.

2. Sun, Shade and Wind

Trees and other dense vegetation would be provided in the northwest portion of the proposed park to help reduce wind velocity. Plants would be placed along The Embarcadero to help reduce windspeed, air pollutants, and noise within the park.

D. NOISE

Beyond meeting the requirements of the San Francisco Noise Ordinance relating to construction noise, if there are complaints from nearby residents the City could require that holes be pre-drilled prior to the installation of piles and that acoustical shielding be provided around the pile driver during its use (properly designed shields around pile drivers can yield a 10-15 dBA noise reduction).

Mitigation measures would also be required for the proposed multi-family dwellings on Block F. A noise reduction of 17-18 dBA would be required to meet the California noise insulation standards (see page 131). The specific method of achieving the required reduction would be detailed in the acoustical report required for the project. A copy of this report would be transmitted to the Department of City Planning, where it would be available for public review.

E. VISUAL QUALITY

To minimize view obstruction from residences near the base of Telegraph Hill, the Block B office building would be constructed 19 feet less in height than the 84-foot height limit specified by the San Francisco City Planning Code. A greater height reduction, if adopted, would avoid partially obstructing views east toward the Bay from the lower portion of the Walters Warehouse penthouse and nearby residences respectively. To minimize view obstruction north and northeast toward the Bay from north facing slopes of Telegraph Hill, the lower Block F condominium structure would be placed closer to the Hill, where existing residential units are higher in elevation. Portions of views to the Bay from lower north facing slopes of Telegraph Hill would not be partially obstructed if the roofline of the taller condominium building was no higher than that of Telegraph Landing across Lombard Street. The project sponsor feels that additional measures to lower the building heights proposed would not be economically practical.

The possibility of project area lighting has not been identified as an unavoidable adverse impact on views from Telegraph Hill, as project area lighting fixtures have not been selected. To establish effective area lighting that maximizes safety consistent with the need to minimize conflicts with nighttime views from higher elevations around the project area

a specialist in exterior lighting design would be consulted to determine light source locations, light intensities and type of light source. Exterior lighting would be recessed into fixtures with baffles and be focused downward to avoid glare. When office spaces are not in use or janitorial services not being performed, interior lighting visible to persons exterior to the building would be turned off in accordance with covenants written into office space leases. The covenants would specify that night-time lighting be permitted only in those rooms used for night-time activities or the performance of janitorial services, and that curtains be drawn across the windows facing Telegraph Hill until work is completed.

Electrical and telephone service lines in the project area would be placed underground.

F. HISTORICAL AND ARCHAEOLOGICAL RESOURCES

1. Historic Structures

Present plans call for removal of the remaining wall of the historic Pioneer Warehouse (Griffing's Warehouse, 1852), because it would be in conflict with the projected building on Block A, to an open-space location in the plaza area. Because of the rubble construction of this wall, problems are anticipated in dismantling and reconstruction. An expert in architectural masonry reconstruction with substantial experience in masonry movement, acceptable to the National Advisory Council on Historic Preservation, would be employed by the project sponsor as a consultant and supervisor in the relocation process.

If, for any reason, redesign of the building proposed for Block A should be undertaken, consideration would be given to incorporation of the Pioneer Wall into the new design. Such incorporation would be preferable to relocation and would be more likely to preserve the wall intact.

2. Archaeological Resources

The probability of one or more Gold Rush hulks existing in the project area and potential artifacts of the Gold Rush period (1849-1857) in or under the present fill poses two mitigation problems: (1) Substantially intact remains of a Gold Rush hulk would represent an archaeological find which most likely would qualify for the National Register of Historic Places. A testing program designed to maximize the probability of accurate location of any such remains before beginning construction would be desirable. (2) It is uncertain whether artifactual deposits exist which would qualify for the National Register of Historic Places.

No program short of excavating the entire site could absolutely prove or disprove that there are any such deposits. Therefore a preconstruction testing program designed to sample sites would be undertaken where archival study and analysis show the highest historical archaeological potential.

The availability of the known characteristics and precise location of a portion of the hulk of the Gold Rush storeship Niantic in San Francisco permits testing the adequacy of an electrical resistivity sensing device that can probably be used to test possible copper-clad hulk location at a cost far below that of conducting conventional mechanical borings at only the most likely locations. Resistivity sensing and other modes of remote sensing are not useful in testing for most subsurface materials of historical interest in urban areas because of interference from reinforcing steel, utility pipes and cables, and other materials found in urban subsurface locations. As a result, a program of conventional borings could be part of the program.[1]

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[1] A description of the remote-sensing equipment and program will be found in Appendix B under "Archaeological Conclusions and Recommendations," along with test boring sites, reasons for specific test site locations and other details.

The project sponsor agrees that the testing program would be conducted under the supervision of a qualified historical archaeologist, with one or more field assistants and technical experts as phases of the program require. The proposed program would be as follows:

(1) Perform a remote sensing test on the Niantic remains for a demonstration of equipment potentially usable on the Levi's Plaza project site (see Appendix B for a description).

(2) If, in the judgment of the Principal Investigator, this test demonstrates the value of the equipment under conditions similar to those in Levi's Plaza, it would be used in lieu of 5 of the 11 conventional test borings that would be proposed in the absence of this test equipment, or that would be implemented if the Principal Investigator concludes that the equipment is inadequate for the intended purpose.

(3) Six 24-inch mechanical exploratory borings would be placed at the locations indicated in Appendix B to test for other cultural remains of historical archaeological significance and to support the remote sensing location of hulks.

(4) In the event that the remote sensing program for hulk identification is not implemented on the Levi's Plaza site, then five 24-inch mechanical exploratory borings would be placed at the locations indicated in Appendix B.

(5) Five additional 24-inch exploratory borings would be held in reserve for use of locations designated by the Principal Investigator in the event that test results indicate the need for any or all of them.

(6) The Principal Investigator would prepare a report, within 30 days of the completion of the pre-construction testing program, that makes known the findings and offers recommendations for any further archaeological procedures, if any are needed, to avoid impact to cultural resources of National Register significance.

Further exploratory investigation may be recommended if the preconstruction testing proves to be inadequate to determine effectively the extent and potential National Register significance of materials located. Alternatively, monitoring of construction excavation at a specific location or locations by a qualified historical archaeologist and/or qualified assistants may be indicated.

If the recommendations stemming from the preconstruction testing program do not indicate the need for retention of the on-going services of a qualified historical archaeologist, then the State Historic Preservation Officer would be notified immediately upon discovery of cultural materials and the site would be inspected by his representative in order to determine the significance of the find with respect to the National Register of Historic Places standards.

G. COMMUNITY SERVICES

Water

Plant materials tolerant to dry soil conditions would be chosen for the landscaped areas.

H. ENERGY

The design of the proposed project has not advanced to the level at which specific energy calculations can be made. However, new construction initiated after 1 July 1978 is required to comply with Title 24, Division 20, Articles 1 and 2 of the California Administrative Code regarding Energy Conservation Standards for New Non-residential and Residential Buildings.

The project would comply with the standards contained in Title 24. In order to meet the standards, some energy conservation design measures have already been established.

The air conditioning system would have "economizer-cycles", using outside air when the outside temperature allowed; return-air fixtures would be installed in the ceilings to circulate the air, and to keep heated air from the light fixtures close to the ceilings, minimizing the air conditioning needed for the occupied areas; there would be dual lighting control, allowing the lights to be turned to half level when daylight permitted it and during maintenance hours; the dual lighting controls would be operated by switches on each floor, as Title 24 does not allow group switching systems. Double pane, solar windows would be installed, except on northfacing walls.

Solar energy was considered for the project, but rejected due to initial capital costs judged prohibitive by project sponsor.

I. TRANSPORTATION

1. Measures Designed to Decrease the Traffic and Parking Demand

Two kinds of impacts need to be mitigated under this overall goal: those created by the location of the proposed project in relation to the existing transit system, and those of the travelers who drive cars where relatively good transit service is available (e.g. near The Embarcadero Center).

To mitigate the first type of impacts, transit connections would need to be provided between the major transit trunk lines (BART, AC Transit, the ferries, and SP) and the proposed project. The demand analysis indicated that the vehicle-driver modal split would increase from about 16% to 17.5% as a result of the proposed move. This assumes about a 4-minute headway on the combined 15 and 42 bus routes and about a 6-minute headway on route 32. As indicated in the section

on impacts on transit, four to six-minute headways on Routes 15/42 and 32 would require an additional 16 bus runs during peak hours on these routes. Assuming that each additional bus during the peak hour requires an additional full-time driver plus equipment, the MUNI capacity increase is estimated to cost approximately $350,000 to $700,000 per year. Implementation of this measure would be the responsibility of the City; as MUNI is a subsidized operation, an increase in federal or state funding, an increase in San Francisco property tax, or enactment of a law making these costs the responsibility of the project sponsor, would be required to fund implementation.

To mitigate the impacts of the Levi Strauss move to the proposed location fully (i.e., to bring the car-driver split from 17.5% to 16%), or in other words to mitigate the travel time lost in the transfer from the regional system to the local transit system, the headways would have to be reduced further to about 3-5 minutes. This would increase the number of buses required on the two MUNI lines. Headways of 3-5 minutes are estimated to bring the car-driver modal split down to the existing 16%, and would mean a decrease of about 9% in traffic and parking demand. This decrease would apply to the employees and to the visitors, but not to parking required for the condominium units and the Ice House. The resulting parking demand would be for about 1,102 spaces, instead of the estimated 1,166 spaces, including the Ice House parking, representing a 5% overall decrease.

For the second kind of impacts (i.e., to decrease the proportion of current Levi Strauss employees driving by car), Table 21 in Appendix D indicates the prime target groups that must be reached if any further decrease in traffic and parking demand is to be achieved. They are, in decreasing order of importance:

County of Origin	Percent of all commuters driving cars
San Francisco	6.5%
San Mateo	3.8%
Marin	3.1%
Contra Costa	1.9%

The first group consists of San Francisco residents commuting by car to the proposed project, an estimated 215 people a day of the total 3,310 employees. These people live within eight miles of the project. Direct transit service between the proposed project site and residential neighborhoods, in addition to the downtown-oriented service, would attract some of these people out of their cars; such a service could be provided by a direct bus route or loop along Broadway, Sansome and Battery, and Bay Streets. The MUNI POM (Planning, Operations and Management) Study recommends an express route along Chestnut, Van Ness, Broadway, Sansome, and Battery Streets. Bicycling is another alternative. Bicycle lanes along the relatively flat and direct roads, plus safe bicycle storage facilities within each project block, could divert a proportion of maybe 2 to 5% of car drivers to bicycling in fair weather. The City of San Francisco would have to implement the bicycle lanes and the project sponsor would provide bicycle rental storage facilities in the garages. Assuming that the direct bus route and the bicycle facilities would affect a total of about 15% of the drivers who originate in San Francisco, parking demand would decrease by about 30 spaces.

Ride-sharing strategies, in the form of car-pool and van-pool programs, should be applied to San Francisco residents and, especially, to drivers from other counties. Such ride-sharing programs could become conditions for the approval

of the parking variance by the City. The City would have to monitor the program once the project is built. Car-pool matching efforts could be undertaken by the major employers. Special maps would be set up in prominent locations where potential poolers could pin tags at the location of their residence.

A van-pool program - complementary to the car-pooling effort - would be more effective. Such programs are gaining the support of employees and employers. A van-pool program costs the employer only minor administrative costs, unless he specifically desires to subsidize it. Levi Strauss currently provides administrative aid to car and van-pooling among employees. Typically, employee-riders pay for the operating costs and for the amortization and insurance, and if their daily commute distance is more than about 20 miles, they make savings below the normal car driving costs, i.e., below the gas and maintenance costs of driving a car.

In determining the parking requirement for the proposed project, the project sponsor has assumed a degree of cooperation between Levi Strauss and employees, and future tenants relative to van-pooling and car-pooling to lessen the need for private transportation. The project sponsor would offer incentive for van-pool programs by providing reduced parking rates for the vans in pools with Levi Strauss employees. Such incentives could be made a condition of City approval of the project.

Nationwide reviews[1] of van-pool programs in large companies indicate that 15 to 20% of vehicle drivers participate.

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[1]A. M. Voorhees Van Pool Study for the Federal Energy Administration, 1977.

If such a program were to include all 3,310 employees in the project site, it could potentially involve 116 car-drivers (20% of all employee car-drivers). The parking demand could thereby decrease by 116 spaces. An additional 11 spaces would have to be provided for the vans, resulting in a net decrease of about 105 spaces. Additional van-pools could be filled with employees who currently are not driving a car; i.e., car passengers and transit riders. Between 20 and 30 spaces could be reserved for van-pools in the garage under Block A.

The project sponsor, BJW, Assoc., would recommend Levi Strauss try car-pool programs, consisting of matching and promotion efforts and of preferential parking for car-pools. Car-pool programs could increase the average vehicle occupancy from about 1.3 to perhaps 1.4 persons per vehicle. This would represent an 8% occupancy increase and a corresponding decrease in parking spaces needed, i.e., a reduction of about 46 car spaces. Increases above 1.4 persons per vehicle would produce correspondingly larger decreases in parking needs.

These incentive measures oriented toward the current car drivers would reduce the estimated employee parking demand by about 155 spaces, from 580 to 425 spaces. But to be fully effective they should be combined with negative measures. A disincentive to car-driving in the case of this project would be to limit the parking supply. In downtown areas such as San Francisco, the parking supply and pricing is the major factor determining vehicular traffic.[1] A reduction in the number of planned parking spaces and the imposition

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[1]San Francisco Bay Area Parking Management Plan, A. M. Voorhees & Associates, 1976. Available for public review at the Department of City Planning Office at 45 Hyde Street.

of special pricing policies are in general the most direct and important strategies that can be applied to reduce traffic in dense urban areas. These strategies would be the responsibility of the project sponsor.

The parking supply reduction should correspond at least to the decrease in demand resulting from the positive measures, i.e., 155 spaces. To reinforce the positive measures, the reduction in supply could be perhaps up to 20% greater. The number of parking spaces would thus be purposely reduced by 186.

Based on the previous analysis, a mitigation program consisting of incentive and disincentive measures that would result in a relatively balanced demand-and-supply situation can be proposed for the current car drivers. The incentive measures would consist of an additional direct bus line along the Broadway or Bay Street corridor, bicycle lanes and bicycle storage facilities, car-pool matching and promotion efforts, preferential parking for car pools in Block F, and a van-pool program with reduced parking rates for the vans in the Block A garage. The disincentive measures should consist of a price-rate structure that would be less favorable to long-term parking, and of a 31-stall decrease beyond the parking reduction estimated for the incentive measures.

To conclude, the original parking demand estimate of 1,166 spaces can be reduced as follows:

- Three-minute to five-minute frequencies on MUNI routes 32 and 15/42 would reduce the parking demand by a little over 5 percent (64 spaces). This improvement program is also intended to mitigate the impacts on current transit riders of the Levi Strauss move.

- The above mitigation program oriented towards current car drivers would reduce the parking demand and supply by about 15 percent (186 spaces).

These two programs could be implemented independently, as they are directed toward different groups of people. Parking demand would decrease from 1,166 spaces to an estimated 916 spaces, a decrease of about 21%. Traffic volumes on adjacent streets would decrease proportionately to the parking decreases of about 21%. A further reduction in parking supply of about 100 spaces could be undertaken on the basis that there are about 100 spaces available in area parking garages (80—100 spaces in the Francisco Bay Garage and 20—30 spaces in the One Lombard Street Garage).

Among other potential mitigation measures that have been suggested is the proposed light rail route along The Embarcadero. A light rail would not be expected to represent an improvement for this project over the three-to-five-minute headway on route 32 already considered. This is because of the relatively short travel distance on the proposed light rail route to the project site, which results in headways being more important than speed.

A more aggressive mitigation program would be for the project sponsor to reduce the proposed parking supply by a greater number of spaces (maybe 250 to 300). Such an action would be in compliance with the objectives and policies stated in the Plan for the Northeastern Waterfront. It would, however, increase parking costs and inconvenience to drivers who have no convenient alternative to the automobile. It may also be against the economic interests of the project sponsor.

2. Measures Designed to Mitigate Traffic Capacity and Safety Impacts

Two intersections have been identified in the transportation impact section as representing potential bottlenecks:

- The Sansome and Embarcadero intersection, which could be improved by widening the approach width on Sansome and adding a right-turn lane to The Embarcadero southbound.

- The Battery Street approach to the Battery and Broadway intersection, which could be improved by adding a right-hand lane that would be optional for through traffic or right turns. With the existing design there are sometimes three vehicles waiting at the intersection side-by-side, even though only two lanes exist. By eliminating a few parking spaces, a full lane could be added to facilitate both right turns and through movement.

These measures would generate capacity increases in the range of 5 to 15%. Such changes would not be in conformity with Master Plan policies to encourage the use of public transit because they would encourage the use of the private car. Any such measure would require approval of the City Traffic Engineer, the Director of Public Works, and the Board of Supervisors. Evaluation of compliance with the Master Plan by the Planning Commission, via the Master Plan Referral Process, would be required prior to Board of Supervisors action. The need for new signals and signs would be evaluated by the Department of Public works. Installation would be dependent upon placement on the priority list for such installations and the availability of funds. The City could require the project sponsor to pay for such safety devices as a condition of project approval.

To minimize the potential weaving problems caused by the vehicles exiting from the Block F garage on Sansome and trying to turn right onto Lombard, vehicles could be allowed to exit from the access point at Greenwich Street. This exit would then be primarily used by the vehicles driving southbound via Greenwich and Battery. This mitigation measure would reduce the traffic level of service at Sansome and Greenwich by introducing another traffic movement at this

intersection. It would probably require signalizing this intersection, subject to City approval and funding. A study of the requirements for signalization would have to be undertaken by the City once the proposed project is built.

To minimize potential safety hazards at the Greenwich intersections with Sansome and Battery, stop signs could be installed by the City on Greenwich at both intersections. Special pedestrian signals could be installed at the sponsor-proposed Filbert Street Plaza pedestrian crossings of Battery Street and Sansome Streets. These could either be pedestrian-actuated green/red signals, or amber signals that would flash during peak hours.

3. Mitigation of Traffic Impacts on Lombard Street and Montgomery Street

The traffic increases on Lombard Street between Sansome and Montgomery Streets could be reduced by either decreasing the parking capacity of the garages served from Lombard and Montgomery Streets, or diverting the entering and exiting traffic towards other access points.

The number of traffic conflicts on Montgomery Street could be reduced by shifting the entrance to the Block G garage onto Chestnut Street or by having a second access point on this street. The additional grading and excavating required to accomplish this measure has precluded alternative vehicular access locations by the project sponsor.

The City could require implementation of these measures as a condition of project approval.

VIII. ALTERNATIVES TO THE PROPOSED PROJECT

A. NO-PROJECT ALTERNATIVE

1. Existing Development

If the Levi's Plaza development were not built, present site uses would be retained. A large portion of the project site is vacant and used for parking. This use does not conform to the goals of the Plan for the Northern Waterfront, which recommends activities that will contribute to the economic needs of the City and encourages a mixture of land uses. With the retention of existing development, none of the impacts associated with the proposed project would be exerted on the Northern Waterfront Planning Area.

The no-project alternative would hold open future options for development, which might eliminate the possibility that the blocks would be designed as a single, coordinated development. Development of the project area on a parcel-to-parcel basis could increase the difficulty of implementation of the goals of the Northern Waterfront Plan. Development of the area as a whole, on the other hand, would permit a more uniform and coordinated design, in keeping with the historical scale of the area. The proposed project permits the Cargo West and Italian Swiss Colony buildings to be retained, an opportunity which could be lost under parcel-by-parcel development.

Deferment of development could give time for emergence of effective societal mechanisms to reduce automobile traffic so that when development occurred less space would have to be devoted to parking and lower traffic impacts would occur.

2. Maximum Permitted Development

Under existing zoning codes, development could be more intensive than this project proposes. Uses would have to conform to the City and Port Plans, and would probably consist of commercial, industrial, residential, or a mixture of these uses. The Code permits development of a floor-area ratio of 5.0 to 1.0 on each of the lots on the project site, as well as a bonus of 25% for that portion of the property that qualifies under the Code as a corner lot. Under these regulations, approximately 2,330,000 square feet of floor area could be developed, assuming that the development meets all of the Code restrictions regarding height and bulk. Such development would contain 31% more floor area than the proposed Levi's Plaza project, and would be estimated to have more impact in terms of traffic generated, number of employees, and increased noise levels. Should the area be developed to this level, it would not provide open space as proposed in the Levi's Plaza development.

B. USE ALTERNATIVES

1. Housing

Housing needs for San Francisco are documented in the Community Development Housing Assistance Plan[1], which indicates a need for some type of housing assistance for 81,000 households. Table 19 shows type of housing assistance by type of household.

The categories in which housing assistance is needed include: households now paying more than 25% of their income for rent; households residing in substandard housing; housing units defined as overcrowded (having more than one person per room

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[1]Mayor's Office of Community Development, Community Development Program and Housing Assistance Plan, San Francisco, August 1977.

TABLE 19

Housing Assistance Needs of Lower-Income Households

	Total	Elderly and Handicapped	Family (4 persons or less)	Large Family (5 persons or more)
White				
Owners	500	400	100	20
Renters	47,100	20,700	25,600	760
	47,600	21,100	25,700	780
Black				
Owners	200	20	50	120
Renters	12,200	2,000	8,180	1,990
	12,400	2,020	8,230	2,110
Spanish-American				
Owners	270	40	50	190
Renters	8,350	1,720	5,150	1,480
	8,620	1,760	5,200	1,670
Asian & Others				
Owners	340	20	60	260
Renters	9,680	2,060	5,840	1,790
	10,020	2,080	5,900	2,050
Total				
Owners	1,300	400	300	590
Renters	77,300	26,500	44,800	6,020
	78,600	26,900	45,100	6,610
Estimated Displacement[1]				
Expected to Reside[2]	2,340	0	2,340	0
Totals	80,940	26,900	47,440	6,610

Source: Community Development Program and Housing Assistance Plan

[1]These estimates were being prepared at the time of publication of the preliminary Housing Assistance Plan.

[2]Includes 1,440 households with head of household employed in San Francisco, as estimated by HUD.

in a dwelling unit); housing inaccessible to handicapped individuals who are capable of residing alone but cannot find suitable housing; and families displaced by government action.

Members of the Chinatown Coalition for Better Housing have expressed concern about the need for low- and moderate-income housing in Chinatown and the adjacent areas of San Francisco.[1]

The Telegraph Landing condominium development fronting Lombard Street was to include approximately 600 units of housing on three city blocks, but only the first phase (189 residential units) was actually constructed. No expansion of the Telegraph Landing development is now planned.[2]

Recognizing the need for additional housing in this area, the sponsor plans to produce approximately 325-350 additional market-rate residential units in the Block F and Block G portions of the proposed project as discussed. These units, together with the 189 condominium units at Telegraph Landing, would produce an approximate total of 514-539 units, 61-86 short of the 600 originally planned for this area. The alternative of providing low- and moderate-income housing was considered for the proposed project; however, a report prepared for the City by Gruen Gruen + Associates[3] states that construction costs are high enough at this time in San Francisco

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[1]Phil Chin, Staff Person, Chinatown Coalition for Better Housing, personal communication, 17 August 1977.

[2]Jim Hancock, Regional Manager, Real Estate Division, Travelers Insurance Company, telephone communication, 29 October 1977.

[3]Gruen Gruen + Associates, Analysis of the Economic Impacts of the Proposed Change in San Francisco Zoning, 17 December 1976. Available for public review at the Department of City Planning Office at 45 Hyde Street.

to preclude the possibility of the development of market housing that can be offered for rent or sale to moderate-income households. The report concludes that the market is not likely to produce new housing for moderate-income families, regardless of what zoning policy is adopted by the City of San Francisco. One can conclude, therefore, that due to construction costs, the project would not provide low-cost housing even if it were developed totally as housing.

The project sponsor is aware of the community concerns and has designated potential in-lieu housing sites at the northwest and southwest corners of Francisco and Kearny Streets. A three-story warehouse on that property may be retained. Discussions at this time are in the conceptual stage. BJW Associates has discussed housing for the sites with various City departments and with the Chinatown Coalition for Better Housing. It is investigating possible funding mechanisms for development of 250 low- and moderate-income housing units.[1] Sponsor-developer options to purchase this property extend into mid-1979.

2. Historic Buildings

a. Retain No Existing buildings in the Project Area

In this design alternative, all existing buildings within the project area would be razed. Demolition of the Italian Swiss Colony Building, designated as a landmark by the Landmarks Preservation Advisory Board, City Planning Commission, and Board of Supervisors (see Section III, Environmental Setting,

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[1]Don Wyler, BJW Associates, Project Manager, telephone communication, 29 October 1977.

Subsection K.3., Historical and Archaeological Resources), would be delayed up to one year because of its landmark status.[1] The Cargo West building would also be demolished. Both buildings have been recognized by the project proponents and others for their architectural and historical significance.

b. Retain All Historic Buildings in the Project Area

Those buildings noted for their architectural and historical significance would continue to lend the area the scale and character of a turn-of-the-century warehouse district. In this alternative the Vorpal Galleries and the Sperry-Abbot buildings would be retained and redesign of the 4-story office building proposed for Block C would occur. This change in design would result in less visual design integration of the project and in a loss of office space and related income to project sponsor. A decrease in the sense of integrated design could result in a decrease in economic viability of the project as a whole.

3. Open Space

Consistent with San Francisco's parkway improvement plans for The Embarcadero, the project sponsors have expressed interest in including additional land within the proposed park on Block D. The Port of San Francisco's triangular Seawall Lot 319 bordered by Greenwich, Battery, and The Embarcadero, and triangular Seawall Lot 320 bordered by Union, Front, and The Embarcadero could be developed as extensions of the proposed park (see Figure 3, page 17).

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[1]Kosrof Chantikian, former staff of Landmarks Board, San Francisco Planning Department, telephone conversation, 25 October 1977.

This would be consistent with the Embarcadero Improvements Plan which calls for the closing of Greenwich Street at its intersection with The Embarcadero and the closing of Front Street from Union Street to The Embarcadero. The intent of the project's sponsors is to include both Seawall Lots in the project at a future point in time after the necessary approvals are secured from the City and Port of San Francisco. Seawall Lots 319 and 320 are not part of the current project construction proposal.

4. Alternative with Fewer Parking Spaces

As indicated in Section VII.I.11, a reduction in parking supply would mitigate the estimated traffic impacts. If the previously described transit, bicycle, ride-sharing, and parking measures were implemented, the parking demand would decrease by about 21% and generate about 21% less traffic. This would represent an estimated decrease of about 700 daily vehicle trips. It would require shorter bus headways and a capacity increase on MUNI routes 15/42 and 32, which would require additional annual operating funds and capital costs for MUNI. It would also require that the future tenants of Levi's Plaza organize a carpool and van-pool program. The conditions required for this alternative are further described in Section VII.I.1.

A project alternative with 916 parking spaces, instead of the originally proposed 1,135 spaces, would reduce the supply of long-term parking spaces. If the parking space decrease were applied to the garage on Block F, the negative traffic impacts projected along Sansome Street would be reduced by about 25 to 30%.

Other alternatives with fewer parking spaces would decrease traffic impacts proportionately to the reduction in parking, and the development and funding requirements for alternative

travel modes would increase proportionately. Parking reductions may increase competition for available parking space and encourage parking on Telegraph Hill and adjacent residential areas if parking is unavailable at the project site. This would be limited by the Preferential Parking program currently in use.

IX. THE RELATIONSHIP BETWEEN SHORT-TERM USES OF THE ENVIRONMENT AND LONG-TERM PRODUCTIVITY

Long-term productivity can be related to the proposed project's characteristics and features. The project's economic productivity would be determined by its financial return to the City of San Francisco and the money which would be spent in the City by those who would work and live at Levi's Plaza.

The project would be a long-term use, estimated at 50 years or more, covering the activities of several generations. In this time period, other options for land use on parcels the project would occupy would be precluded, because the land-use mixture proposed would likely remain stable unless financial imbalances within the regional economy occur.

X. IRREVERSIBLE ENVIRONMENTAL CHANGES THAT WOULD OCCUR FROM IMPLEMENTATION OF THE PROPOSED PROJECT

Changes in productivity, land use, and visual character of the project area would be long-term, yet reversible. The irreversible environmental changes which would take place are the commitment of non-renewable energy resources and of non-recyclable (by present technology) material resources used for the construction and operation of the proposed project.

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Friends of the Earth
124 Spear Street
San Francisco, CA 94105
Attn: Connie Parrish

Northern California Chapter, AIA
790 Market Street
San Francisco, CA 94102

San Francisco Chamber of Commerce
400 Montgomery Street
San Francisco, CA 94102

GROUPS AND INDIVIDUALS (continued)

San Francisco Planning and Urban Renewal Association
126 Post Street
San Francisco, CA 94109
Attn: John H. Jacobs, Executive Director

Chinatown Coalition for Better Housing
920 Sacramento Street
San Francisco, CA 94108
Attn: Phil Chin

Sierra Club
530 Bush Street
San Francisco, CA 94108
Attn: Becky Evans

Mr. and Mrs. Desmond Heslet
235 Greenwich Street
San Francisco, CA 94133

Mr. Milton Maybruck
44 Montgomery Street
San Francisco, CA 94104

MEDIA

KQED Television Studio
500 Eighth Street
San Francisco, CA 94103

San Francisco Bay Guardian
Patrick Douglas, City Editor
2700 19th Street
San Francisco, CA 94110

San Francisco Chronicle
Dale Champion
925 Mission Street
San Francisco, CA 94103

San Francisco Examiner
Don Cantor and Gerald Adams
110 Fifth Street
San Francisco, CA 94103

MEDIA (continued)

San Francisco Progress
Dan Borsuk, Lisa Charrel
851 Howard Street
San Francisco, CA 94103

The Sun Reporter
1366 Turk Street
San Francisco, CA 94115

LIBRARIES

Documents Department
City Library - Civic Center
San Francisco, CA 94102
Attn: Faith Van Liere

Environmental Protection Agency
Library
215 Fremont Street
San Francisco, CA 94105
Attn: Jean Circiello

Government Documents Station
Stanford University
Stanford, CA 94305

Government Publications Department
San Francisco State University
1630 Holloway Avenue
San Francisco, CA 94132

Hastings College of the Law - Library
198 McAllister Street
San Francisco, CA 94102

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APPENDICES

APPENDIX A

SITE NOISE EXPOSURE SURVEY

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August 1977

SITE NOISE EXPOSURE SURVEY

To determine the existing noise environment in the project site area, noise measurements were made at three locations on 10-11 August 1977. The measurement locations are shown in Figure 28, page 66, of Secton II. A. 7, Environmental Setting, and are further described below.

Site 1 was located in the parking lot between the Embarcadero and Battery, and Filbert and Greenwich. This site was located 100' from the centerline of the near lane of the Embarcadero and 90' from the centerline of the near lane of Filbert Street.

Site 2 was located on the west side of Sansome Street, between Lombard and Greenwich. This site was located 35' from the near lane of Sansome Street and 125' south of Lombard.

Site 3 was located on the Greenwich steps, approximately 250' west of Sansome Street.

The three sites were chosen to represent the noise environment throughout the project area. Noise levels at Site 1 are typical of the present noise environment in the proposed park between Battery Street and Embarcadero, and also represent the present noise environment where the proposed office building would be located between Battery and Front Streets. Sound Levels at Site 2 typify the present noise environment along Sansome Street where there are existing apartments and where proposed offices and apartments would be located. Site 3 is representative of the present noise environment of residential areas on Telegraph Hill closest to the project.

The noise data were obtained by recording noise levels on a Sony TC-153SD cassette recorder. The input device was a Bruel & Kjaer (B&K) 2219 Sound Level Meter. Both units were calibrated with a B&K Type 4230 Calibrator before and after the measurements. To analyze the data, the recorded information was played back through a B&K 4426 Noise Analyzer, from which the L_{eq} and percentile levels (L_{10}, L_{50}, etc.) can be read directly.

Weather conditions during the measurements were over-cast and calm, and the temperature ranged from 50° to 55°F during all measurement periods. Each site was monitored for 15 minutes during each of three time periods: 7-9 a.m., 4-6 p.m., and 5-7 a.m. The results of the survey, including comments on the predominant noise sources during the measurement period, are summarized in Table 5 page 68.

Glossary

A WEIGHTED SOUND LEVEL (dBA); A unit of loudness corrected for the variation in sound-frequency response of the typical human ear at commonly encountered noise levels.

L_{dn}: The descriptor established by the U.S. Environmental Protection Agency to describe the average day-night level with a weighting applied to noise occuring during the night-time hours (10 p.m. - 7 a.m.) to account for the increased sensitivity of people during sleeping hours.

L_{eq}: The equivalent steady-state sound level which in a stated period of time would contain the same acoustic energy as the time-varying sound level during the same time period.

L_{10}: The A-weighted sound level exceeded 10 percent of the time. L_{10} represents the "average peak" level caused by nearby sources of short duration.

L_{50}: The A-weighted sound level in decibels exceeded 50 percent of the time. L_{50} represents the "average" sound level

L_{90}: The A-weighted sound level in decibels exceeded 90 percent of the time. L_{90} represents a good estimate of the background sound level.

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APPENDIX B

LEVI'S PLAZA

REPORT ON HISTORICAL AND ARCHAEOLOGICAL RESOURCES

Roger Olmsted

Nancy Olmsted

Historical Consultants

Allen Pastron

Archaeological Consultant

23 JUNE 1978

Note: Copies of Appendix B, Levi's Plaza, Report on Historical and Archaeological Resources, are available for review by interested readers at the San Francisco Department of City Planning, Office of Environmental Review, 45 Hyde Street, San Francisco, CA 94102. Telephone (415) 552-1134.

APPENDIX C

PROJECTED REVENUES TO THE CITY AND COUNTY OF SAN FRANCISCO

APPENDIX C

PROJECTED REVENUES TO THE CITY AND COUNTY OF SAN FRANCISCO GENERATED BY THE PROPOSED LEVI SQUARE DEVELOPMENT

1. Sales Tax

The gross sales for the proposed project are estimated at $1.64 million per year. At a sales tax rate of 1 percent for the City and County, revenue to San Francisco is estimated at $16,400 annually. This figure would change each year, based on fluctuations in sales volume, inflation, and tax rate.

2. Employees' Payroll Taxes

Employees' payroll taxes are 1.1 percent of the gross payroll (1977). Salaries of potential employees are estimated to average $13,200 a year. It is estimated that there would be 3,310 employees, with a total salary of $44,000,000. Applying the 1.1 percent employees' payroll tax yields $480,000 per year for the project. The City would also receive employees' payroll taxes on the salaries of construction workers in the sum of $302,000 .

3. Parking Tax

The parking spaces provided are expected to generate an annual gross income of $360,000 (about $440 annually per stall for 810 non-residential stalls). Applying the 15 percent City parking tax rate to the gross receipts, $53,000 would be generated annually.

4. Utilities Tax

Water. The estimated annual water bill for the completed project is $7,900. The utilities tax (at a rate of 5 percent) would amount to $400 annually.[1]

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[1] Nellie Vernon, San Francisco Water Department, telephone conversation, 20 October 1977.

Fuel Oil. At present rates the estimated annual fuel oil bill for the completed development would be $77,000.[1] The utilities tax on this bill would be $3,800.

Electricity. The estimated electrical bill for the completed project would be $1,500,000 annually. At 5%, the utilities tax would be $75,000. These figures are based on existing billing rates, which are probably lower than actual future rates, as the cost of electricity is expected to rise, given the fact that 60% of the electricity supplied to California depends on fossil fuels.[2]

5. Property Tax

Post Jarvis-Gann property tax revenues from the property are estimated at about $569,000 based on 1% of a market value of $56,900,000.

6. Personal Property Tax

Personal property tax revenue, on personal property estimated to have a market value of $27,000,000 would be $270,000 based on post Jarvis-Gann personal property tax rate of 1% of market value.

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[1]George Amaroli, Conservation Division, California Public Utilities Commission, telephone conversation, 20 October 1977.

[2]California Energy Resources Conservation and Development Commission, Quarterly Fuel and Energy Summary: Second Quarter, 1975.

APPENDIX D

TRANSPORATION TERMINOLOGY AND TECHNICAL DETAILS OF TRANSPORTATION IMPACT ANALYSIS

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APPENDIX D-1

TRANSPORTATION TERMINOLOGY

ADT	(Average Daily Traffic) Total volume of traffic crossing a fixed point over a 24-hour period, averaged over a month, a year or several years.
Accessibility	The relative ease with which a location can be reached via various modes of transportation.
Arterial Road	A major roadway with partial control of access.
Capacity	Maximum number of vehicles, riders (transit) that can be carried during a determined period of time.
Collector Road	A roadway with uncontrolled access connecting arterials and freeways to local streets and private residences and businesses.
Directional Split	The difference in magnitude between volumes in one direction and volumes in the opposite direction on a road segment.
Freeway	High speed roadway with full control of access.
Full Control of Access	Preference is given to through traffic by providing access connections with selected public roads only and by prohibiting crossings at grade or direct private driveway connections.
HDV	Heavy Duty Vehicle. Any motor vehicle designated for transportation of property and rated at more than 6,000 lbs. from vehicle weight or designated primarily for transportation of persons and having a capacity of more than 12 persons.
Interchange	A system of interconnected roadways to provide interchange of traffic between two or more roadways, usually freeways.
Level of Service	Several methods can be used to describe the operating conditions on a given roadway when it is accomodating various traffic volumes. Level of service is a qualitative measure of the effects of traffic flow factors, such as speed and travel time, interruptions, freedom to maneuver, etc. Levels of service referred to in this report are:[1]

[1]Definitions were derived from Highway Research Board, Highway Capacity Manual, Special Report No. 87, 1965. These are standard definitions used by the San Francisco Office of Environmental Review.

Level of service A describes a condition of free flow, with low volumes and high speeds. Traffic density is low, with speeds controlled by driver desires, speed limits, and physical roadway conditions. There is little or no restriction in maneuverability due to the presence of other vehicles, and drivers can maintain their desired speeds with little or no delay.

Level of service B is in the zone of stable flow, with operating speeds beginning to be restricted somewhat by traffic conditions. Drivers still have reasonable freedom to select their speed and lane of operation. Reductions in speed are not unreasonable, with a low probability of traffic flow being restricted. The lower limit (lowest speed, highest volume) of this level of service has been associated with service volumes used in the design of rural highways.

Level of service C is still in the zone of stable flow, but speeds and maneuverability are more closely controlled by the higher volumes. Most of the drivers are restricted in their freedom to select their own speed, change lanes, or pass. A relatively satisfactory operating speed is still obtained, with service volumes perhaps suitable for urban design practice.

Level of service D approaches unstable flow, with tolerable operating speeds being maintained though considerably affected by changes in operating conditions. Fluctuations in volume and temporary restrictions to flow may cause substantial drops in operating speeds. Drivers have little freedom to maneuver, and comfort and convenience are low, but conditions can be tolerated for short periods of time.

Level of service E cannot be described by speed alone, but represents operations at even lower operating speeds than in level D, with volumes at or near the capacity of the highway. Flow is unstable, and there may be stoppages of momentary duration.

	Level of service F describes forced flow operations at low speeds, where volumes are below capacity. These conditions usually result from queues of vehicles backing up from a restriction downstream. Speeds are reduced substantially and stoppages may occur for short or long periods of time because of the downstream congestion. In the extreme, both speed and volume can drop to zero.
Load Factor	Measure of degree of utilization of an intersection approach roadway during one hour of peak traffic flow.
Modal Split or Mode Split	The relative proportion of trips by each mode. For example, if 4 out of 100 trips from point A to point B were made by bus and 96 by auto, the bus and auto mode splits would be 4% and 96%, respectively.
Mode of Travel	Mode of travel is the means of transportation, whether by bus, car, subway, etc.
Partial Control	In addition to access to selected public roads, only limited access to private driveways and crossings at grade are also provided.
Peak Hour(s)	The 60 minute period(s) in which volume on traffic is highest for the day. The peak hours are typically around 7 a.m. to 9 a.m. and 4 p.m. to 6 p.m.
Peak Hour/Peak Direction Factor	Percent factor expressing peak hour/peak direction traffic as proportion of ADT.
Peak Hour/Peak Direction Traffic	Highest peak hour traffic of both directions.
Uncontrolled Access	No limit to the number of accesses to the roadway is established.
Volume/Capacity Ratio, V/C Ratio	The ratio of volume of traffic to capacity for a road or road segment. The V/C ratios are useful to estimate levels of service and congestion.
Design Speed	The maximum safe speed that can be maintained over a specified section of highway when conditions are so favorable that the design features of the highway govern.

APPENDIX D-2

TECHNICAL DETAILS OF TRANSPORTATION IMPACT ANALYSIS

a. Basic Assumptions

Transportation impacts are estimated on the basis of the number of employees (3,310) that are expected to work on the project site and on the basis of visitors that would be attracted to the office and commercial facilities.

Based on an average occupancy of two persons per dwelling unit, about 622 to 672 people would live in this project.[1] The travel impacts on the resident population on transit systems are not considered, since they would be small compared to employee commuting and business travel and would usually occur in the direction opposite to the peak commuting traffic.

The traffic impacts due to the proposed residential units on the adjacent streets have been assessed together with the total project impacts on adjacent traffic conditions on the basis of the parking spaces provided.

b. Framework of Impact Analysis

The proposed project would produce different types of transportation impacts at various levels. To be considered first is the additional travel by each mode to and from the downtown area, taken to include the Financial district and the area north of Broadway, where Levi's Plaza is planned to be located. This analysis is based on the expected travel

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[1] Telegraph Landing contains 189 dwelling units housing 360 residents, or 1.9 residents per unit.

behavior of the employees and visitors attracted by the proposed project. It is assumed that this number of employees and visitors would represent additional employees and visitors to the downtown area, in that if they are shifted from other downtown locations, as is the case for the Levi Strauss employees, they would be replaced by other employees and visitors at those locations. The existing businesses and warehouses at the project site would be replaced by the proposed project, thus tending to decrease the base traffic that already exists. This decrease, small and difficult to quantify, is not considered. The estimation of the overall travel impacts then, represents worst-case projections.

Once in the downtown area, travelers to the project would either continue on the same travel mode to the project or would change modes. Many would change modes, for example, because the original mode does not come near the project or because it would be cheaper to park some distance away from the project site. Increases of traffic into the downtown area would therefore be different from increases on adjacent streets.

The second part of the analysis addresses the travel impacts in the area immediately surrounding the proposed project. The travel impacts that are evaluated are the impacts on traffic conditions in the immediate vicinity and the effects of the additional transit ridership. Since the additional traffic volumes on the adjacent streets would be directly controlled by the amount of parking supplied on the project site, traffic impacts would depend on the additional parking spaces. The number of parking spaces supplied would ultimately determine the amount of traffic generated by the project.

c. Effect of Proposed Project on Modal Splits

Levi Strauss surveyed its employees to determine their current travel behavior and their feelings about the proposed move. About 46 percent of the 1,200 employees responded. The breakdown of the different travel modes used is shown in Table 20. (The first column of figures totals more than 100% because some employees gave multiple answers. In the second column these figures are adjusted to 100%.)

Table 21 shows the mode breakdown by car driver, car passenger, and transit rider for each county of origin. The totals are slightly different from the above tabulation because of rounding.

The move of the Levi Strauss corporate offices from Embarcadero Center to the proposed Levi's Plaza project would affect the share of passengers carried by different transportation modes (modal splits). The offices would be farther from the major transit systems, so convenience of transit might be reduced.

Employees arriving by BART currently have about two blocks to walk to get to work; in the future they would have to walk about 13 blocks or transfer to a local bus. In the future, employees arriving by AC Transit or by ferry would also have to walk about 13 blocks or transfer to a local bus to get to work. Service by Golden Gate Transit would be more convenient since buses now stop in front of the proposed project. The reduced use of transit noted above would tend to be counterbalanced by other factors, such as potential operational improvements in the transit systems and increased parking costs in downtown San Francisco. Implementation of the MUNI Planning, Operations, Management (POM) study currently under way by MUNI Planners will streamline and simplify MUNI service. In that study, it is proposed

TABLE 20

Travel Modes of Levi Strauss Employees

Primary Travel Mode	Percentage incl. multiples	Adjusted Percentage
MUNI	31%	24%
BART	29	22
Car driver	21	16
AC Transit	10	8
Golden Gate Transit	10	8
Ferry	7	5
Car passenger	6	4
Walk	5	4
SP Train	3	2
Greyhound	1	1
Other (bicycle, taxi)	8	6
	131%	100%

TABLE 21

Existing Travel Origins and Modes of Levi Strauss Employees

County of Origin	Total Percent	Percent of car drivers	Percent of car passengers	Percent of transit riders
San Francisco	43%	6.5	2.0	34.5[1]
San Mateo	12	3.8	0.2	8.0
Santa Clara	3	0.4	0.1	2.5
Contra Costa	13	1.9	0.6	10.5
Alameda	13	0.8	0.2	12.0
Marin	15	3.1	0.9	11.0
Sonoma/Solano	1	0.1	0.1	0.8
	100%	16.6	4.1	79.3

[1]Includes other modes such as walking, bicycling, taxi, etc.

that bus service to the project area be upgraded by establishing around the downtown area a two-way loop route serving the Southern Pacific Depot, the Transbay Terminal, BART, Sansome and Battery, Fisherman's Wharf, and Polk Street. This route would tend to offset any service decreases on other MUNI routes.[1]

The share of passengers carried by BART, AC Transit, and the ferries would be decreased by not more than 10% as a result of the increased travel distance of employees from the BART Stations, the AC Transit, and the ferry terminals to the proposed project site. This percentage is estimated to be a realistic reflection of the aforementioned commute inconvenience of employees, especially in view of the high costs of the alternative of driving a car. The proportion of Golden Gate bus riders is assumed to increase by about 10% due to an improved level of service.

The proportion of additional visitor travel is based on traffic counts of office buildings undertaken by CALTRANS. It is assumed that for every 1.5 employees who arrive by car there would be one daily visitor arriving by car. Visitors arriving by other modes are not considered. Their impacts occur at off-peak periods when street and transit capacities are generally adequate.

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[1]Tom Matoff, Transit Planner at MUNI, conversation, 22 August 1978.